Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

SHOUT
SHARE
IT

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 583

Contribution from the Office of Public Roads and Rural Engineering
LOGAN WALLER PAGE, Director

Washington, D. C. ▼ March 7, 1918

REPORT ON EXPERIMENTAL CONVICT ROAD CAMP FULTON COUNTY, GA.

By

H. S. FAIRBANK and R. H. EASTHAM, Highway Engineers,
and W. F. DRAPER, Passed Assistant Surgeon,
U. S. Public Health Service

CONTENTS

	Page
Striking Results of the Experiment	2
The Plan of Cooperation	4
The System of Convict Labor in Georgia	4
Description of the Camp Site	7
Camp Buildings	10
Other Camp Structures and Fixtures	15
Moving Portable Buildings	15
The Water Supply	19
Sewage Disposal	22
Garbage Disposal	23
Clothing	24
Furniture and Equipment	25
Subsistence	29
Medicine and Medical Attention	36
Transportation of Convicts and Supplies	38
Convict Population	39
Discipline and Morale	44
Sanitation	45
Records and Reports	47
Summarized Costs of Maintenance	56
Road Work	57

WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 583

Contribution from the Office of Public Roads and Rural Engineering, LOGAN WALLER PAGE, Director

WASHINGTON, D. C. March 7, 1918

REPORT ON EXPERIMENTAL CONVICT ROAD CAMP, FULTON COUNTY, GA.

By H. S. Fairbank and R. H. Eastham, *Highway Engineers*, and W. F. Draper, *Passed Assistant Surgeon, U. S. Public Health Service.*

CONTENTS.

	Page.		Page.
Striking results of the experiment	2	Furniture and equipment	25
The plan of cooperation	4	Subsistence	29
The system of convict labor in Georgia	4	Medicine and medical attention	36
Description of the camp site	7	Transportation of convicts and supplies	38
Camp buildings	10	Convict population	39
Other camp structures and fixtures	15	Discipline and morale	44
Moving portable buildings	15	Sanitation	45
The water supply	19	Records and reports	47
Sewage disposal	22	Summarized costs of maintenance	56
Garbage disposal	23	Road work	57
Clothing	24		

Without a single attempt to escape, an average of 40 negro convicts were maintained for 10 months in the Fulton County (Ga.) honor camp conducted under the observation of the United States Office of Public Roads and Rural Engineering and the United States Public Health Service. This notwithstanding the facts that the convicts were worked without armed guards, without exceptional conditions as to hours of labor, without special rewards or other unusual inducements to good behavior, and with the camp located near a trolley line and within 11 miles of the city of Atlanta, from which most of the convicts were sentenced, a condition admitted by all competent authorities to be most unfavorable to the successful operation of an honor camp.

With a diet prescribed by the United States Public Health Service, ample in quantity and containing all the properties essential to maintain laborers engaged in heavy outdoor work, the convicts were fed at a cost 9 cents per day lower than that required to maintain other convicts on an unbalanced diet in the same county at the same time.

5847°—18—Bull. 583——1

At a cost of only 6.2 cents per man per day specially designed light and airy portable buildings were provided, and their suitability for the purposes of convict camps was demonstrated by the fact that they were moved at less expense than would have been incurred in moving quarters of any other type but tents.

A supply of pure running water was made available in the camp at a cost of only 1.7 cents per man per day. This result is particularly enlightening in view of the fact that the cost of installing running water systems in convicts camps is thought to be prohibitive by the majority of camp officials.

Waste and garbage were disposed of scientifically by incineration, at insignificant expense; and a system of sewage disposal, including water-closets and a cesspool, was installed and operated at a cost of about one-half cent per man per day.

The sick rate was maintained for six months at less than one-half of 1 per cent; and medicine and medical attention were provided at a cost of 1.6 cents per man per day.

A system of records and reports was installed and operated for six months at a cost of less than $25, and the saving on food alone resulting directly from the employment of the system during the same period amounted to more than $350.

STRIKING RESULTS OF THE EXPERIMENT.

Taken as a whole, the outstanding results of the experiment demonstrate that cleanliness, comfort, and humanity in the convict camp are not inconsistent with economy and efficiency in the work of the inmates. More specifically the operation of the camp has demonstrated—

That the honor system can be applied to negro convicts without holding out tempting hopes or rewards, extra commutation of time, granting of greater privileges, or awards in money.

That monotonous prison fare can be replaced at lower cost by a scientifically diversified diet that makes for additional bodily vigor and contented mind.

That convicts can be housed in sanitary buildings, provided with clean bedding and clothing at a cost little greater than that of makeshift and insanitary sheds, filthy bedclothes, and unfit uniforms.

That a supply of pure running water can be made available in the camp at surprisingly low cost, with great advantage in convenience and sanitation over the primitive "water-toting" methods followed in the majority of camps.

That insanitary methods of waste and garbage disposal can be replaced by a thoroughly scientific system with little trouble and insignificant expense.

That care and attention given to the diet and the sanitary conditions will yield abundant fruit in a remarkably low rate of sickness.

That a businesslike system of records and accounts can be installed and operated at small expense, and that its worth will be proved by the ease with which leaks and extravagances can be detected and eliminated, and by which a high degree of economy can be effected.

And that the slightly increased cost of maintaining convicts on the higher plane indicated by the above suggestions is fully offset by the increase in efficiency of the working force, so that the cost of work performed is not measurably affected.

These are the most striking results of the operation of the Fulton County camp. The methods by which they were obtained are described in the following pages.

The camp was established as the result of the studies of convict labor for road work conducted in 1914 and 1915 by the Office of Public Roads and Rural Engineering and the Public Health Service. These studies embraced an investigation of conditions, methods, and practices pertaining to the use of convicts in road construction in 21 States, a wide reading of the available literature, and a digest of the opinions of numerous specialists in highway construction, penology, and sanitation. A mass of valuable information was accumulated covering practically all phases of the problem. This material was arranged conveniently and, together with such specific recommendations as seemed warranted by the data in hand, was published as Bulletin No. 414 of the United States Department of Agriculture, entitled "Convict Labor for Road Work."

It was expected that the operation of the camp would establish by actual test and demonstration data of great practical value along several lines, among which might be mentioned the housing, feeding, and management of the convicts. A special type of portable building was designed with a view to determining the practicability and economy of this type in comparison with other camp structures. A balanced ration, under a rigid system of weighing, checking, and cost keeping, was installed to ascertain whether this diet and system would effect economy and promote the welfare of the convict. The honor system was followed in the discipline of the convicts, all of whom were negroes, as this system, although generally recognized to be successful in dealing with selected white convicts, rarely had been applied to the discipline of negro convicts. It was thought that this problem was well worth a practical determination both from economic and humanitarian standpoints.

The plan was first suggested early in the summer of 1915 by representatives of the Office of Public Roads and Rural Engineering to Mr. W. T. Winn, at that time chairman of the Committee on Public Works of the Board of County Commissioners of Fulton County, Ga.

Mr. Winn welcomed the opportunity to improve the methods of handling the convict force and recommended to the board that a cooperative arrangement be made with the Office of Public Roads and Rural Engineering and the United States Public Health Service for the operation of a demonstration convict road camp. The board, consisting of S. B. Turman, chairman; T. J. Hightower, jr., vice chairman; W. L. Gilbert, W. T. Winn, and J. Oscar Mills, gave its approval to the scheme, which was thereupon approved by the State Prison Commission of Georgia. This action by the Board of County Commissioners indicated their earnest desire to improve the condition of the county convict forces and their intelligent appreciation of the possibilities for bettering existing conditions.

THE PLAN OF COOPERATION.

The county commissioners agreed to establish an honor camp of approximately 40 negro convicts, to inaugurate a system of discipline and to provide suitable portable camp buildings, equipment, materials, and supplies, all in accordance with the plans and recommendations of the Office of Public Roads and Rural Engineering. The county also undertook to supply to the convicts food of the character and in the amount recommended and specified by the United States Public Health Service, and to provide for the management and organization of the working forces, as well as for the keeping of a system of records and reports in accordance with the suggestions of the Office of Public Roads and Rural Engineering. The two Federal bureaus agreed, respectively, to assign an engineer and a sanitary officer to supervise the road work and the conduct of the camp and to be of general assistance to the commissioners in connection with other county camps and road work. To cover the cost of collecting the data desired by the Government, it was arranged that parts of the salaries of the three county officials so employed should be paid by the Office of Public Roads and Rural Engineering.

THE SYSTEM OF CONVICT LABOR IN GEORGIA.

As the experimental camp was essentially only one unit in the prison system of the county and State, it necessarily was subject to local rules and regulations and to some extent to local customs. Therefore a brief outline of the system in force in the State, and of the usual methods of housing, feeding, and guarding the convicts, will indicate the limitations of the experiment and afford a basis for estimating the value of the results attained.

All males convicted of misdemeanors or felonies in the State, except such felons as are required by law to be kept at the State farm, may be employed upon the public roads by the authorities of the several counties. During the year from June 1, 1915, to May 31, 1916, 412 white and 3,170 negro felons and 217 white and 3,052 negro misde-

meanants were so employed. These convicts constitute a State force which the State prison commission apportions, according to population, among the various counties desiring their use. The responsibility of employing and maintaining the prisoners is borne by the several counties under the direction and supervision of the prison commission; and for the guidance of the county authorities the commission has established rules and regulations governing housing, feeding, guarding, discipline, etc. The convicts are under the immediate control of wardens appointed by the prison commission with the concurrence of the county authorities, and the commission also employs supervisors to visit the various counties and inspect the convicts and their work.

Camps established by the counties are of two classes, permanent and temporary. In general, the former consist of wooden barracks frequently located at or near the poor farm. In some of the counties these barracks are well designed and well equipped, convenient, and sanitary, but in many of the smaller counties the sanitary conditions are poor. The quarters in the temporary camps are tents, cages, or cars, and sometimes portable buildings. The sanitary conditions are bad, as a rule, in camps of this character, particularly the cage camps, in which the cages usually are seriously overcrowded.

The beds or bunks provided are varied in character; in a few cases they are metal cots, but more often wooden bunks or individual pallets laid on continuous platforms. Two sheets, sufficient blankets, pillows and pillowcases are furnished to each man, and nightshirts also are provided.

Misdemeanants are clad in suits of striped cloth; but felons are divided into three grades according to conduct, and wear gray, brown, or striped suits according to class. The weight of clothing provided for all classes is adapted to the seasons, and the cloth generally is of satisfactory quality, the clothing in fair condition.

The rules of the prison commission require that food be provided for each convict in not less than the following amounts:

Corn bread without stint, three meals each day except when wheat bread is furnished; wheat bread without stint, three meals each week; three-quarters pound of salt pork each day; one pound of fresh meat or 1½ pounds of fresh fish twice each week; sirup or molasses three times per week; vegetables three meals each week; one cup of coffee for breakfast each day; salt, pepper, and vinegar without stint.

Many of the counties furnish diets of somewhat greater variety and abundance than that prescribed, and the average cost of subsistence in 1916 was approximately 22 cents per man per day.

It is the general practice, except in the case of cage prisoners, to secure all convicts at night by means of leg chains attached to a continuous gang chain and to one ankle of each convict. As an

additional safeguard at least one armed night guard is placed on duty in each camp.

The convicts are under constant supervision all day of guards armed with shotguns and revolvers, the number of guards usually approximating about one-tenth of the number of convicts. With these measures in force the number of escapes from the various county gangs represents from 1 to 3 per cent of the number of convicts employed.

Few privileges are accorded, a small weekly allowance of tobacco, and permission to conduct a restricted correspondence with relatives and friends being the most notable.

Punishment is inflicted by withdrawing the privileges and by whipping. Corporal punishment may be administered only by the warden or deputy warden; not over 10 lashes may be given, and it is unlawful to apply the lash to the naked skin. A record of each case of punishment is required by the prison commission, but in spite of all these regulations there is no doubt that the strap is used with cruelty in many cases.

The hours of labor are from sunrise to sunset, with one hour for rest and dinner from November to February, inclusive, one and one-half hours in March, April, September and October, and two hours in May, June, July and August.

The best of the camps of the State are conducted with some degree of economy and efficiency, but in a majority much of the saving possible by the use of convict labor is dissipated by wasteful management, and much of the road work performed by the convicts is of the simplest character, consisting of unsystematic patching and repair of earth, sand-clay, and top-soil roads, which experience has demonstrated can not be done economically by convicts.

The conditions existing in Fulton County at the time of the inauguration of the experimental camp were representative of the best in the State. The county chain gang numbered about 550 prisoners. These were quartered in seven permanent camps in various sections of the county, and one portable cage camp. The latter had a population of 20 men and was known as the "honor" camp. Its inmates were chosen from the other camps of the county as a mark of honor for good behavior, but in no other sense was it an honor camp. The men were locked securely in the cages at night and were worked under armed guards during the day. However, when the experimental camp was opened 17 of its first inmates were assigned to it from this camp and it was known thereafter as the "portable" camp.

All camps and convicts in the county are under the care of a warden and there is a deputy warden in charge of each camp. The road work, however, is done under the direction of the county superintendent of public works, and all surveys and strictly engineering work are done by the county engineer.

DESCRIPTION OF THE CAMP SITE.

The preliminary arrangements for the experiment were completed and agreed upon in October, 1915, and work on the construction of the buildings was begun November 3. Various causes, including bad weather, the slow arrival of building material, and disputes over right of way of the road to be constructed, delayed the opening of the camp until January 10, 1916. On that day 17 men were transferred to the camp and set to work cleaning the buildings, gathering firewood, and other chores incident to the opening of the camp. On January 12, 16 additional men were selected and sent from several camps, and road work was begun. Not until January 17, however, was the camp manned to capacity. Eight more men were received on that date, thus increasing the population to 41. As the quarters would accommodate only 40 conveniently, one man was returned on the 19th of the month, and from that time the population of 40 was maintained as closely as possible.

The camp was operated under the cooperative arrangement until August 23, 1916. On that date the convicts were transferred from the experimental camp and confined in cages at the county fair grounds. This step was taken by the county commissioners without the consent of the Federal bureaus. It was explained as an emergency measure necessary to complete a race track at the fair grounds in time for the Southeastern Fair, and the commissioners expressed their willingness to hasten the return to the experimental camp and to extend the operation under the cooperative arrangement for a period equal to the time lost, but it was believed by the Office of Public Roads and Rural Engineering that it would be difficult to resume the experiment along the old lines, particularly in respect to discipline, and the cooperation of the Federal bureaus accordingly was withdrawn. However, after the convicts were returned, the camp remained under Federal observation to a certain extent until it was moved to a new site on November 22.

The first work selected for the experimental camp by the county commissioners was the grading of a section of the Powers Ferry Road approximately 2 miles in length. (See fig. 1.) Accordingly, on November 9, 1915, a camp site was selected about 3,000 feet from one end of the road. It was an almost level plot of sufficient area to accommodate all the camp buildings, from which the ground sloped away in all directions. The part selected for the accommodation of the main buildings was free of trees, but was covered with a heavy growth of tall grasses. The part selected for the stable and corral lay to the north of the clearing in a growth of pine trees. These, while they afforded no shade for the quarters, were in such position as to protect the camp effectively from the cold north wind. The soil consisted of about 3 inches of top soil overlying a micaceous clay. It was sufficiently porous to absorb water rapidly and did not become

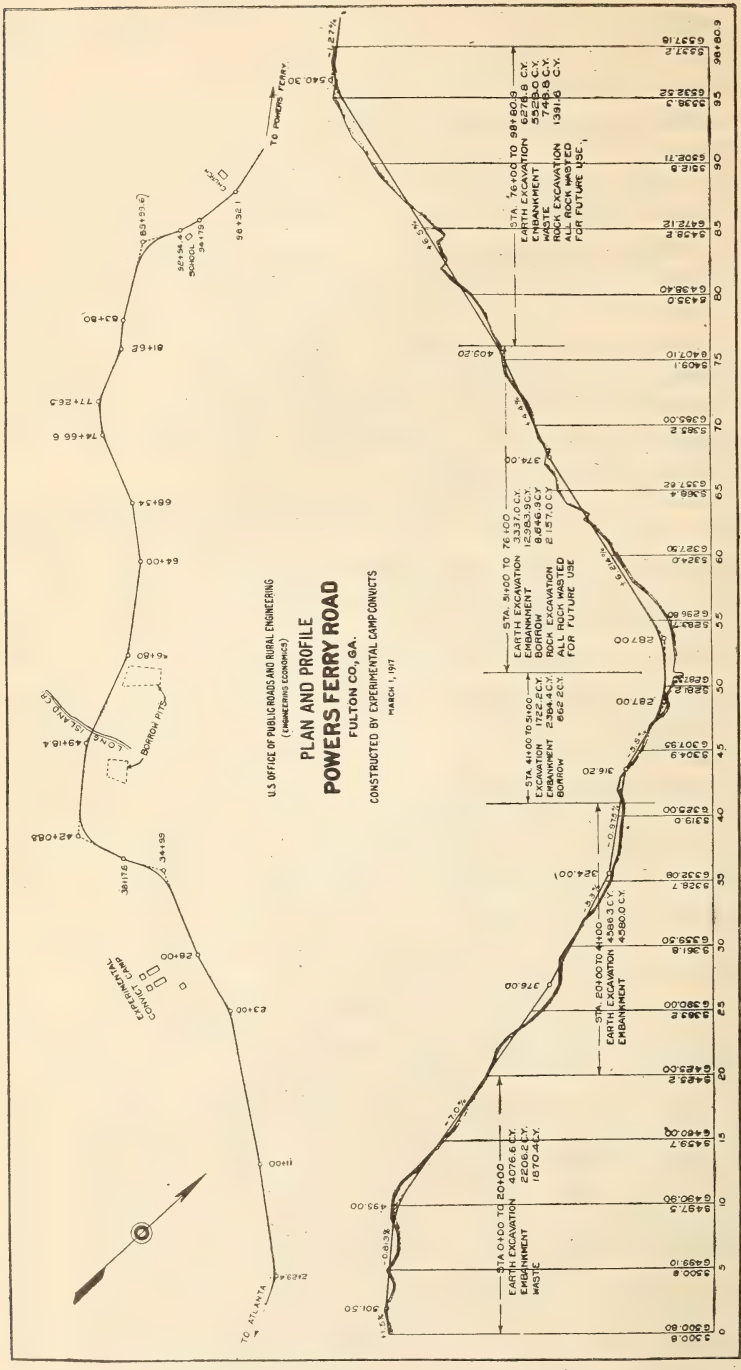


FIG. 1.—Plan and profile of Powers Ferry Road.

muddy except during very heavy rains. Permission was obtained from the owner for the use of the land free of charge, and therefore the only expense for the site was the cost of clearing, laying out a flower bed, and constructing paths and roads. This was done at a

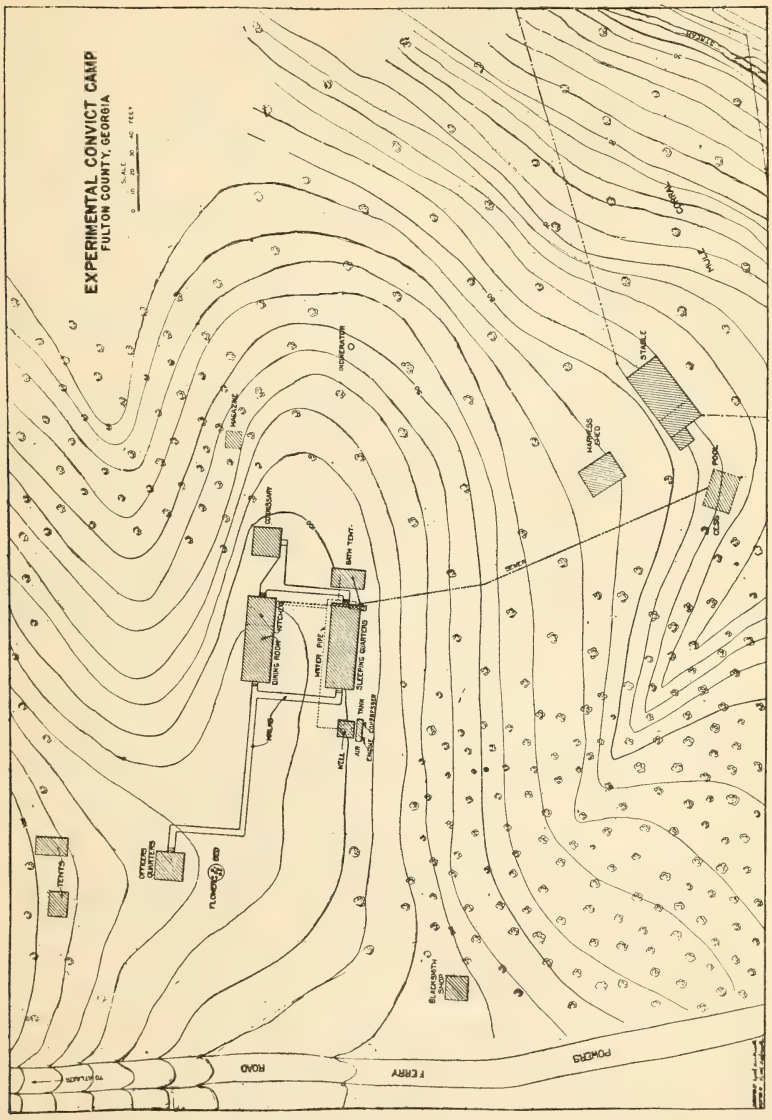


FIG. 2.—Ground plan of experimental convict camp, Fulton County, Georgia.

cost of $43.50 in convict labor. The site was occupied for 311 days. As there were 7,174 convict calendar days in the first 183 days up to July 10, it is computed that the cost of the site per convict per calendar day was $0.0036. The ground plan of the camp is shown in figure 2.

CAMP BUILDINGS.

Portable buildings and tents were used for housing the inmates and officers. The stable, harness shed, and blacksmith shop were constructed at the site of rough lumber and galvanized iron. The portable buildings were of a special type designed by the Office of Public Roads and Rural Engineering. The sills, 4 inches wide and 8 inches deep, were cut to the proper lengths to support buildings 18 feet square and were so arranged that any number of such buildings might be joined end to end to form a building 18 feet wide and any multiple of 18 feet in length. They were fastened together at the corners of the building by means of 6 by 6 by $\frac{5}{8}$ inch angles and $\frac{5}{8}$-inch bolts and lag screws. The floor joists, 2 inches wide by 6 inches deep, were set on 2-inch strips nailed to the bottom of the sills, and were spaced 2 feet $2\frac{1}{2}$ inches apart and held in an upright position by means of 1-inch blocks nailed to the sills on each side of them in such manner as to form slots.

The walls were built in sections, each 3 feet $7\frac{3}{16}$ inches in width and 9 feet from floor to eaves. They were built of $\frac{7}{8}$ by 4 inch tongued and grooved material on frames of 2 by 4 inch pieces. Alternate sections were fitted with standard 6-light 38 by 42 inch window sashes and solid wooden shutters of $\frac{7}{8}$-inch tongued and grooved lumber. These were hinged at the top so as to swing outward, and when open they acted as awnings. The wall sections were joined together with $\frac{1}{2}$-inch bolts through the 2 by 4 inch frames, and were held down to the sills by means of $\frac{5}{8}$-inch lag screws.

The floor consisted simply of 6 by $\frac{7}{8}$ inch boards, 9 feet long or equal in length to one-half the width of the buildings. These were laid across the sills and were fastened at their ends only. Along the center of the building they were held down by a batten or floor strip screwed through them to the center joists, and at the sides of the building by the wall sections which rested on them.

The wall sections were tied together at the top by 2 by 4 inch pieces bolted to the top of the sections. When thus bolted to the 2 by 4 inch frame, they formed 4 by 4 inch plates upon which rested the 2 by 6 inch rafters, spaced 3 feet $7\frac{3}{16}$ inches apart, so that they fell directly over the wall joints. The rafters were braced and held down to the plates by means of knee braces of $\frac{1}{2}$-inch round iron rods provided with turnbuckles. They were tied near the ridge by short wooden collar beams, 2 by 6 inches in section, and near the eaves by $\frac{1}{2}$-inch round iron tie rods provided with turnbuckles. The turnbuckles on the two sets of the rods made it possible to allow for swelling and shrinking of the lumber in seasoning, and at all times to keep the walls vertical and the roof as it was designed to stand, at a pitch of 5 inches to 1 foot.

The roof was made in sections of the same width as the wall sections, fabricated of 1 by 6 inch boards nailed to 2 by 4 inch battens or purlins. On the ends of these short pieces of 4 by 4 by ½-inch angle iron were fastened, by means of which and ½-inch bolts the roof sections were attached to the rafters. Each roof section was covered with 3-ply ready roofing, glued to the sheathing, and the joints between the sections were covered, water-tight, with laps of the same material, 12 inches wide, fastened down by roofing nails and cement. The joint at the ridge was covered with galvanized ridge roll, and metal ventilators were set into the ridge at intervals of 18 feet.

All doors and windows were provided with fly screens of galvanized wire mesh.

The complete detailed plans accompanying this bulletin are for buildings similar to those described, but not like them in all respects. (See detached Appendix Plates). The plans show a height of wall of 8 feet, which is regarded as sufficient, and this height was recommended to the county commissioners, but the rules of the prison commission require a wall 10 feet high. The height of 9 feet, which was actually adopted, was the result of a compromise between the height recommended and that required by the prison commission.

Another difference is found in the floor, and is the result of the experience gained in constructing the buildings. Instead of the 6-inch boards which were used, the plans call for ⅞ by 3½ inch tongued and grooved boards which, instead of projecting under the wall sections, are held down at the sides by means of battens.

The increase in the height of the wall resulted in an increase in the cost of the buildings, but this is approximately offset by the change in the floor construction. The cost of the buildings as constructed, therefore, is probably quite close to that of buildings constructed according to the plans.

The camp buildings housing the sleeping quarters, kitchen and dining room, commissary, and office were of this type and were of the following sizes:

	Feet.
Sleeping quarters	18 by 54
Kitchen and dining room	18 by 54
Commissary	18 by 18
Office	18 by 18

All parts of these buildings were constructed at the county shops at the Bellwood Convict Barracks, in Atlanta. To expedite erection, they were hauled to the camp site unpainted, but before they could be erected the work was halted and the building sections were thoroughly wet by a series of heavy rains. The poorly seasoned lumber absorbed the moisture and swelled so that it was necessary to bore

new bolt holes in some places so as to adjust the sections to each other. Subsequently, when the lumber dried, many of the parts contracted, leaving cracks as much as one-fourth inch wide in some places. These were drawn up or filled, and in the fall of 1916 the buildings were in very satisfactory condition. The whole trouble would have been avoided if the sections had been painted inside and out before they were sent to the camp site.

The following is a complete bill of the material and labor entering into the construction of the buildings as described, and the costs given are the actual costs of construction:

Summary of materials and labor and cost of constructing portable buildings for the Fulton County Experimental Convict Camp.

Lumber—Longleaf pine, No. 1 common:

Pieces.	*Sizes.* Inches.	Feet.
25	4 by 18	8
6	$3\frac{7}{16}$ by $4\frac{7}{16}$	18
11	2 by 8	18
162	2 by 6	18
15	2 by 6	16
9	2 by 6	12
315	2 by 4	18
63	2 by 4	16
42	2 by 4	12
10	2 by 4	10
50	2 by 2	18
1	2 by 2	12
69	1 by 12	16
34	1 by 10	16
4	1 by 10	12
30	1 by 10	10
14	1 by 9	18
305	1 by 6	18
830	1 by 6	12
46	1 by 4	18
4	1 by 4	16
22	1 by 3	18
5	1 by 3	12
165	1 by 2	18
$13\frac{1}{2}$	1 by 2	16
2	4 by 5	18
11	1 by 1	18
69	$\frac{1}{2}$ by 3	18
59	$\frac{1}{2}$ by 2	18
621	$\frac{7}{8}$ by $3\frac{1}{2}$ T Eb	18
136	$\frac{7}{8}$ by $3\frac{1}{2}$ T Eb	16
Total cost of lumber		$493.45

Hardware:		
7 galvanized-iron ventilators	$15.75	
	Inches.	
221 lag screws	½ by 3½	
70 lag screws	⅝ by 3½	
240 lag screws	⅝ by 8	
502 machine bolts	½ by 4	
176 machine bolts	½ by 5¼	
60 machine bolts	½ by 5½	
8 machine bolts	½ by 7	
36 machine bolts	½ by 7½	
12 machine bolts	½ by 8	
432 machine bolts	½ by 4¾	
72 machine bolts	⅝ by 3½	
80 machine bolts	½ by 5	
200 machine bolts	½ by 6½	
64 eyebolts, 1½ eye	⅝ by 8	
128 eyebolts, ¾-inch	⅝ by 6¾	
12 gross ½-inch wrought washers.		
16 dozen ⅝-inch wrought washers.		
1,184 ½-inch malleable wing nuts.		
456 ⅝-inch malleable wing nuts.		
56 pieces 6 by 6 by ⅝-inch angle iron 4 inches long.		
700 pieces 4 by 4 by ½-inch angle iron 3½ inches long.		
64 pieces ½ by 1½-inch iron 14 inches long.		
200 pairs 6-inch tee hinges.		
6 deadlocks.		
6 door handles.		
1 door pull.		
35 pieces ⅝-inch round iron 12 feet long.		
64 ⅝-inch tie rods, 1 foot 6 inches long, ¾-inch eye.		
104 ⅝-inch turnbuckles.		
2,100 2-inch No. 16 flathead wood screws.		
4 pairs butt hinges 3 by 3 inches.		
4 2-inch wire hooks and eyes.		
4 double-action hinges.		
160 feet 10-inch ridge roll.		
32⅔ dozen 1½-inch bright wire hooks and eyes.		
100 coach screws.		
1 keg 6-penny finishing nails.		
1 keg 4-penny common nails.		
1 keg 8-penny common nails.		
1 keg 10-penny common nails.		
Total cost of hardware		$329.22
Miscellaneous:		
42 single sashes 38 inches by 42 inches	$54.60	
96 screens with galvanized-wire mesh	86.65	
40 rolls 3-ply ready roofing	96.00	
105 pounds No. 9 flake glue	13.65	
Total cost miscellaneous materials		250.90

Paint:		
550 pounds white lead	$37.12	
1 barrel half and half oil	34.10	
30 pounds chrome yellow med. in oil	4.20	
Total cost of paint		$75.42
Carpenter labor:		
Time of shop foreman	55.00	
10.7 days at $3.50	37.45	
88.5 days at $2.50	221.25	
1.5 days at $4	6.00	
Total cost of carpenter labor		319.70
Blacksmith and machinist labor:		
4½ days at $2.75	12.38	
5½ days at $2.50	13.75	
4½ days at $2	9.00	
Total cost of blacksmith and machinist labor		35.13
Painter labor:		
22 days at $3.50	55.00	
1 month at $40	40.00	
Total cost of painter labor		95.00
Total cost of buildings		1,598.82

The above is the cost of constructing the parts and units of the buildings. The cost of assembling them and erecting the buildings at the camp site was as follows:

86½ carpenter days at $2.50	$216.25
28 convict days at 77 cents	21.56
	237.81

If to these costs be added the cost of loading and hauling the sections and parts from the county shops at the Bellwood Convict Barracks, where they were made, to the camp site, which was $76.87, the cost of the buildings erected may be summarized as follows:

Cost of materials	$1,148.99
Cost of labor (construction of parts)	449.83
Cost of loading and hauling	76.87
Cost of labor (erection)	237.81
Total cost of buildings erected	1,913.50

Free labor was used in constructing and erecting because all convicts were employed on other work from which they could not be spared. However, it is believed that the work could have been performed satisfactorily by selected convicts at a considerable saving. In view of the fact that the cost of the convict labor was only about 77 cents per working day and the average wage paid to free labor was $2.40, it seems probable that the saving would have amounted to fully one-half the labor cost, or approximately $350, a reduction of about 18 per cent.

OTHER CAMP STRUCTURES AND FIXTURES.

In addition to the portable buildings the full quarters equipment included two wall tents each 12 by 21 feet; one wall tent 12 by 16 feet, all of 12-ounce duck; and miscellaneous fixtures, such as stovepipe and shelving, and fire extinguishers for the protection of the property. Some of these were purchased after the opening of the camp.

As stated, the stable, harness shed, and blacksmith shop were constructed at the site of rough lumber and galvanized iron. They cost complete $150, but this is regarded as a charge against the work only.

MOVING PORTABLE BUILDINGS.

The structures were designed to combine strength, durability, convenience, sightliness, and portability, and to admit abundant light and air. It was hoped that they would meet satisfactorily the requirements of camps which are moved from one site to another at intervals of from 6 to 12 months, taking the place of the tent, the cheap shack, and the convict cage, none of which is entirely satisfactory. Therefore, the economy and convenience with which they were razed, transported to a new site, and reerected were among the most interesting developments of the experiment.

The original plan was to move the camp to a new site immediately upon completion of the grading on the Powers Ferry Road. Consequently, early in July a site was prepared on Hemphill Avenue, $3\frac{3}{4}$ miles from the first site. A road was cleared as an approach from the public road, a cesspool was excavated, posts were cut and set to line and elevation to receive the sills of the buildings, and a well was begun and almost completed when the commissioners decided to surface the Powers Ferry Road with top soil before leaving the first site. Shortly after this the convicts were transferred to the fairgrounds, and the top soiling was not completed until November 11. Moving of the quarters was begun on November 15. At that time the camp population was half depleted, and the quarters intended for the accommodation of 40 men were moved with a force of 23. This shortage of labor naturally resulted in a considerable increase in the time required to complete the moving. The facts that the working-day at that season was only eight hours long and that the first cold weather of the year was experienced during the week also served to prolong the time required, and the buildings were not completely erected at the new site until November 22, one week from the time the transfer was begun. However, an analysis of the costs of moving given in Table 1 shows the actual labor expended on the work was equivalent to only about $3\frac{1}{3}$ days of work with the full working force of 37 men.

Some damage and loss is inevitable in moving buildings of any sort a distance of 3¾ miles. That resulting from the transfer of these buildings was very slight. The total damage consisted of one broken tie rod, one broken rafter, one broken collar beam, and four broken window lights. The loss amounted to 190 board feet of lumber, 6 gallons of roofing cement, 12 squares of 2-ply ready roofing, and 10 pounds of roofing nails, the last three items resulting from the necessary reconstruction of the roofing laps. The tie rod, rafter, and collar beam were repaired at the camp, and the cost is included in the labor cost. The other items are added to the labor cost in Table 1, which shows that the total expense of moving the four buildings was $191.70.

TABLE 1.—*Cost of moving portable buildings at the Fulton County, Ga., Experimental Convict Camp.*

Setting foundation posts:		
2 carpenter days, at $2.26	$4.52	
13 convict days, at 77 cents	10.01	
		$14.53
Razing buildings:		
2½ foreman days, at $1.90	4.75	
2 foreman days, at $2.90	5.80	
36½ convict days, at 77 cents	28.10	
		38.65
Loading and hauling buildings:		
17½ convict days, at 77 cents	13.48	
14½ team days, at $1.91	27.70	
		41.18
Erecting buildings:		
2 foreman days, at $1.90	3.80	
1 foreman day at $2.90	2.90	
7 carpenter days, at $2.50	17.50	
57 convict days, at 77 cents	43.89	
		68.09
Damage and loss:		
Replacing 4 window lights	1.00	
190 feet b. m. lumber, at $20 per M	3.80	
6 gallons roofing cement, at 65 cents	3.90	
12 squares ready roofing, at $1.55	18.60	
10 pounds roofing nails, at 6 cents	.60	
		27.90
Total cost of moving buildings		190.35

OTHER COSTS OF MOVING CAMP.

The cost of $190.35, given above, represents the expense of moving the portable buildings only. The complete costs of moving the entire camp a distance of 3¾ miles, including 1 mile over a bad road, are given in Table 2.

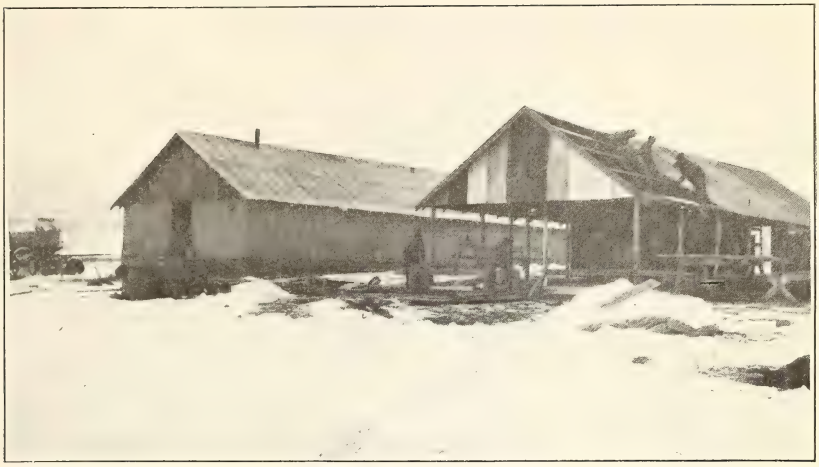


FIG. 1.—QUARTERS IN THE VIRGINIA CAMP. NO PROVISION FOR ADMISSION OF LIGHT OR AIR.

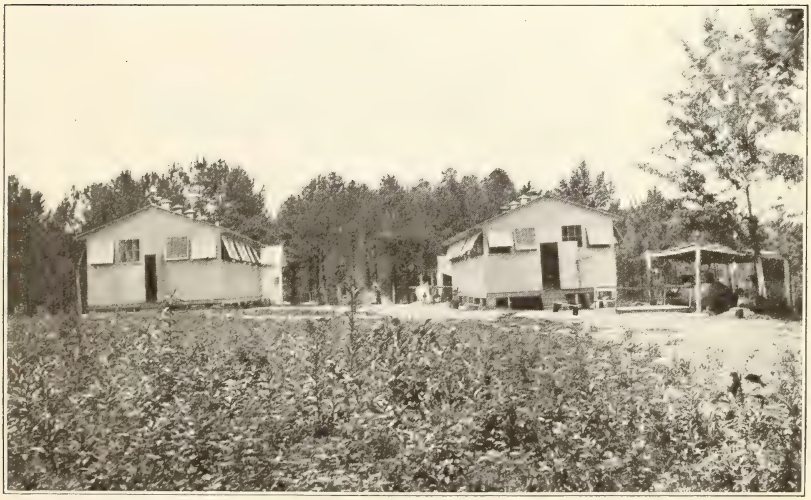


FIG. 2.—PORTABLE QUARTERS OF THE GEORGIA CAMP. DESIGNED TO ADMIT ABUNDANT LIGHT AND AIR.

FIG. 1.—TEARING DOWN BUILDING BEFORE MOVING EXPERIMENTAL CAMP.

FIG. 2.—WAGON BEDS USED FOR MOVING CAMP AND SECTIONS OF BUILDINGS.

FIG. 1.—MOVING EXPERIMENTAL CAMP.

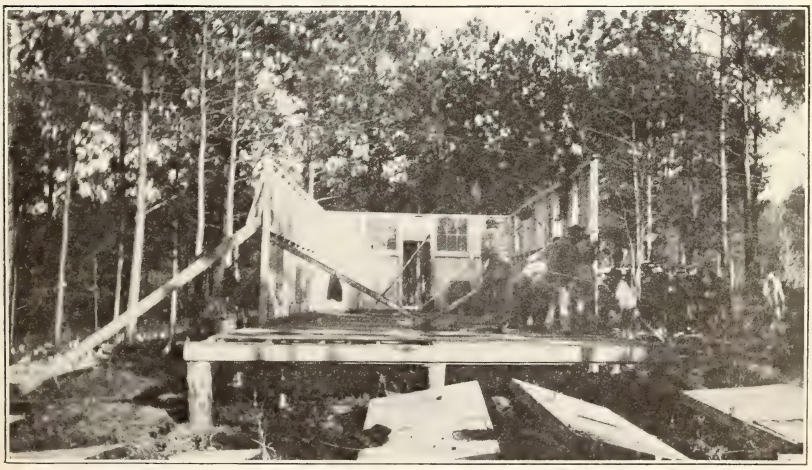


FIG. 2.—ERECTING BUILDINGS AFTER MOVING EXPERIMENTAL CAMP.

FIG. 1.—PLACING ROOF ON BUILDINGS AFTER MOVING EXPERIMENTAL CAMP.

FIG. 2.—PUTTING ON ROOF STRIPS AFTER MOVING EXPERIMENTAL CAMP.

TABLE 2.—*Complete cost of moving camp, Fulton County, Ga., Experimental Convict Camp.*

Moving portable buildings	$190.35
Moving other buildings and tents	48.03
Preparing new well	134.11
Excavating cesspool	12.08
Clearing site, and miscellaneous	39.03
Plumbing	25.00
Fencing	7.12
Clearing roadway to camp	13.37
Total cost of moving camp	469.09

With the purpose of discovering how these structures compare in portability with structures of other types an engineer was assigned to observe the moving of a camp of 48 convicts at Washington, Va. The quarters in this camp were not of the so-called "portable" type, but were designed to be transferable readily from one site to another. As shown in Plate I, figures 1 and 2, they consisted simply of a galvanized-metal roof supported by posts set into the ground, the sides being inclosed only by curtains of cotton duck. It is evident that they are not as substantial nor do they afford as much shelter as the portable buildings used in the experimental camp. The comparative cost data on the moving of the two sets of structures, given in Table 3, therefore is of considerable interest, as it shows that in expenditure of labor the moving of the Virginia buildings was much more costly than the portable buildings, though the actual cash expenditure in each case was about the same on account of the lower wages paid to guards and foremen and the lower convict-maintenance cost in Virginia.

In each case the camp was moved approximately 3¾ miles, including 1 mile over a bad road. Weather conditions favored the Atlanta operations to the extent that the transfer there was made in November when the working day contained 8 hours, and only one day of the seven over which the operations were extended was disagreeably cold, whereas the Virginia camp was moved in December when the length of the working day was only 7 hours, the temperature uncomfortably low, and snow covered the ground throughout the week occupied by the moving. As the Virginia data cover the cost of moving only the camp buildings, the similar items on the cost of moving the Atlanta camp have been selected for comparison.

TABLE 3.—*Comparison of cost of moving portable buildings and Virginia camp buildings.*

Atlanta camp.				Virginia camp.			
Operation.	Actual cost.		Convict labor.	Operation.	Actual cost.		Convict labor.
			Days.				*Days.*
Setting foundation posts:				Setting posts:			
2 carpenter days, at $2.26.	$4.52			18½ convict days, at 60 cents.[1]		$11.10	18.5
13 convict days, at 77 cents.	10.01						
		$14.53	13.0				
Razing buildings:				Razing buildings:			
2½ foreman days, at $1.90.	4.75			84 convict days, at 60 cents.		50.40	84.0
2 foreman days, at $2.90..	5.80						
36½ convict days, at 77 cents.	28.10						
		38.65	36.5				
Loading and hauling buildings:				Loading and hauling buildings:			
17½ convict days, at 77 cents.	13.48			17 convict days, at 60 cents.	$10.20		
14½ team days, at $1.91...	27.70			17 team days, at $1.91...	32.47		
		41.18	17.5			42.67	17.0
Erecting buildings:				Erecting buildings:			
2 foreman days, at $1.90 .	3.80			103 convict days, at 60 cents.		61.80	103.0
1 foreman day, at $2.90.	2.90						
7 carpenter days, at $2.50.	17.50						
57 convict days, at 77 cents.	43.89						
		68.09	57.0				
Moving stable, barn, and officers' tents:				Moving stable:			
1 foreman day, at $2.25..	2.25			7 team days, at $1.91....	13.37		
2 foreman days, $1.90....	3.80			60 convict days, at 60 cents.	36.00		
1 blacksmith day, at $2.25	2.25					49.37	60.0
2 team days, at $1.91.....	3.82						
46 convict days, at 77 cents.	35.42						
		47.54	46.0				
Damage and loss:				Damage and loss:			
Replacing 4 window lights	1.00			1,500 feet b. m. lumber, at $12.50 per M.		18.75	.....
190 feet b. m. lumber, at $20 per M.	3.80						
6 gallons roofing cement, at 65 cents.	3.90						
12 squares ready roofing, at $1.55.	18.60						
10 pounds roofing nails, at 6 cents.	.60						
		27.90	.....				
Total.....		237.89	170.0	Total.....		234.09	282.5

[1] Salaries of guards and foremen included in the maintenance cost of prisoners.

DEPRECIATION OF PORTABLE BUILDINGS.

It is impossible to forecast at this time what will be the life of the buildings. On July 10, 6 months after they were put into service, there was no noticeable depreciation. After their transfer to the new site, when they were more than 10 months old, the actual observable damage and loss amounted to less than 1½ per cent of their value; it may be said safely that the total depreciation during the first year amounted to no more than 5 per cent. It is to be expected that this rate will increase each year during the economic life of the buildings, but what this rate will be can not be predicted. From present indications it seems entirely possible that their life may be as long as 8 years, but this figure probably is too great to use as a basis for estimating the economy of the buildings. It has been assumed for this purpose that the rate of depreciation will increase each year by an increment of 5 per cent, beginning with 5

per cent the first year. According to this assumption, which certainly is sufficiently severe, the life of the buildings will be almost 6 years; but to be still more conservative, the fraction has been dropped and the economic life has been taken at 5 years for all purposes of cost computation.

COST OF QUARTERS ON ANNUAL BASIS.

The total cost of all camp quarters up to July 10, the date of the first inventory, is given in Table 4.

TABLE 4.—*Total cost of all quarters at Fulton County, Ga., Experimental Convict Camp, from January 10 to July 10, 1916.*

Portable buildings erected	$1,913.50
2 wall tents, 12 by 21 feet, walls 6 feet	90.84
1 wall tent, 12 by 16 feet, walls 6 feet, with fly	41.25
Miscellaneous fixtures, appliances, and additions	193.96
Total cost to July 10	2,239.55

In determining the per-capita per-day cost of the quarters it has been considered that the entire cost of erecting the quarters and loading and hauling them should be charged off in the period of 311 days during which the camp occupied its first site, and a proportional amount has been allowed for the 183 days up to July 10. With this procedure in mind it is believed that the per-capita costs per day given in Table 5 will require no further explanation.

TABLE 5.—*Cost of quarters per capita per calendar day for period January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

Depreciation of portable buildings at 20 per cent per year, original value $1,598.82	$159.88
Proportional cost of loading and hauling and erection=$\frac{183}{311}$ of 314.68	185.17
Depreciation of 12 by 16 foot tent and fly at 25 per cent per year, original value, $41.25	5.15
Depreciation of two tents, each 12 by 21 feet, at 50 per cent per year, original value, $90.84	22.71
Interest on original investment of $2,045.90, at 6 per cent per year	61.38
Depreciation of miscellaneous fixtures, appliances, and additions, estimated	12.42
Cost of quarters from Jan. 10 to July 10	446.71
Total number of convict calendar days from Jan. 10 to July 10, 1916	7,174
Cost of quarters per convict per calendar day	$0.0623

THE WATER SUPPLY.

The water supply at both sites was obtained from wells dug by the convicts. Both were dug through a micaceous clay soil for their entire depth. That at the first site was 51 feet deep by 6½ feet in diameter and cost $39.90 to excavate. The second well was 49½ feet deep by 7 feet in diameter and cost $43.31 for excavating, $76.46 for a galvanized-iron casing 16 feet long, including the cost of hauling and placing, and $14.34 for a concrete curbing, or $134.11 in all.

The flow of the well at the first site was approximately 1,200 gallons in 24 hours. The consumption of water for bathing, according to meter measurement, was 15 gallons per man per day. The consumption for other purposes, estimated, also was 15 gallons. The flow, as will be seen from these figures, was approximately equal to the demand on the bathing days. That there was actually no reserve flow was shown by the fact that when, for a short period in the spring, the stock was watered from the well instead of from the neighboring creek from which they customarily were supplied, the draft was much too heavy for the supply.

An analysis of the water made by the health department of Atlanta about a month after the opening of the camp showed that the water contained 46 bacteria per cubic centimeter and no colon bacilli in 10 cubic centimeters, indicating that the sanitary quality of the water was satisfactory.

The water was piped from the well (Pl. V, fig. 1) to the sleeping quarters, to supply the water-closets and wash trough, to the showers in the bath tent (Pl. V, fig. 2), to the kitchen, and to three outside faucets. It was forced from the well to the faucets by air pressure operating in a pneumatic pump installed in the well. The air was supplied to the pump from an air tank of 100 cubic feet capacity, in which it was stored by means of an air compressor driven by a 2¾-horsepower gasoline engine. The cost of the water-supply equipment is given in Table 6, below:

TABLE 6.—*Cost of water-supply equipment.*

1 2¾-horsepower gasoline engine	$62.75
18 feet 3-inch belting	17.28
Second-hand outfit consisting of— 1 pneumatic pump 1 air tank, 100 cubic feet capacity 1 air compressor Pressure gages and fittings (New value, $360.)	300.00
1 20 by 40 inch sink	5.10
1 2-inch standard P trap	.45
2 2-inch standard ¼ bend	.70
1 2-inch standard reducing Y, 2 by 4 by 4 inches	.87
20 2-inch standard S. H. pipe	1.60
100 feet 1½-inch black pipe	7.87
70 feet 1-inch black pipe	3.40
50 feet ¾-inch galvanized pipe	2.51
1 pair sink brackets	.30
5 1-inch galvanized standard ells	.56
6 ¾-inch galvanized standard ells	.48
12 ¾-inch galvanized nipples	.43
8 ⅜-inch galvanized jam nipples	.24
1 1-inch globe valve	1.00
6 1½-inch black ells	.54

6 1¼-inch black tees	$0.60
6 1½ by ¾ inch black tees	.66
2 1¼ by ¾ inch black reducing ells	.20
2 1 by ¾ inch black reducing ells	.18
4 1-inch black ells	.30
2 1½-inch black G. J. unions	.84
2 1-inch black G. J. unions	.60
6 ¾-inch black G. J. unions	1.08
6 ¾-inch black ells	.17
6 ¾-inch hose bibs	4.50
Second-hand piping: 30 feet ¾-inch galvanized pipe, 45 feet ½-inch galvanized pipe, 65 feet 1-inch galvanized pipe	11.65
2 hot-water heaters	17.00
1 40-gallon hot-water tank	8.75
Total cost water-supply equipment	452.61

Once each day, except bathing days, the engine was operated from a half hour to one hour to charge the air tank with air at 100 pounds pressure. On bathing days it was necessary to recharge the tank immediately before the bathing began. With the tank charged a supply of water was always available at any of the faucets, as the opening of a faucet automatically set the pump to work.

Four shower fixtures were provided in the bath tent, and water was heated for bathing by two heaters coupled in tandem, having a combined water-heating surface of 880 square inches, and a grate area of 127 square inches. A 40-gallon tank was installed for the storage of hot water.

Table 7 shows the results of a test of the efficiency of the hot-water system.

TABLE 7.—*Results of a test of the hot-water system at the Fulton County, Ga., Experimental Convict Camp.*

Heater dimensions:	
Grate area	127 square inches.
Heating area	880 square inches.
Temperatures:	
Feed water	57° F.
Bath water	105° F.
Air in tent	94° F.
Air outdoors	46° F.
Time:	
Fires started	3.30 p. m.
Bathing started	5.00 p. m.
Bathing finished	5.30 p. m.
Fuel consumption:	
Wood	5 pounds.
Coal	32 pounds.
Water consumption (metered), 80 cubic feet	600 gallons.
Hot water remaining in tank at 5.30 p. m	20 gallons.
Number of inmates bathed	40

The water system at the first site was used for a period of 311 days. Charging off the entire cost of the well and the labor of installation in that time, and computing the cost of these two items in proportion to time the total and per capita costs of the water used during the first six months, or 183 days, of operation are given in Table 8.

TABLE 8.—*Total and per capita cost of water supply from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

Proportion of cost of well	$23.48
Depreciation of gasoline engine and belt	8.03
Depreciation of air pump and outfit	25.00
Depreciation of piping and fixtures	4.93
Lubricating oil, 12 gallons, at 40 cents	4.80
Cup grease, 10 pounds	.87
Gasoline, 210 gallons, at 21 cents	44.10
Proportion of cost of installation	21.64
Total cost for six months	122.85
Total number of convict calendar days from Jan. 10 to July 10, 1916	7,174
Cost of water supply per convict per calendar day	$0.0171

SEWAGE DISPOSAL.

The plan of sewage disposal recommended by the Federal bureaus was that of sanitary privies for the temporary reception of the wastes, and ultimate shallow burial. Comparatively few convict camps are able to dispose of their sewage by means other than privies; but a truly sanitary privy is found rarely, and the method of its operation is not generally understood. The methods employed in the temporary camps and those somewhat removed from the larger centers of population usually are particularly primitive and the sanitary conditions especially bad. It was hoped the demonstration at the experimental camp would be of most service to these classes of camps. But on account of past disagreeable experiences with poorly kept privies the county commissioners had decided to use flush toilets in all county camps, and deferring to their objection to the recommended method it was agreed to install flush toilets and a cesspool.

The cesspool was excavated at a point 100 yards from the main camp buildings and well, at an elevation 25 feet below them and on a slope leading away from the camp. It was covered with boards over which several inches of earth was spread. As the location was sufficiently removed from dwellings and potable water supplies the pit was left unlined so that its contents might seep into the ground. Its dimensions were 12 feet in width, 20 feet in length, and 10 feet in depth; and into it were piped the wastes of the kitchen, lavatory, shower bath, and water-closets, amounting to fully 600 gallons per day. This large discharge was cared for successfully until the 1st day of June, when the pit was filled to overflowing. From that time until the convicts were transferred to the fair grounds there was a slight overflow every day. As the effluent flowed away from the camp

and the conditions were such that it endangered no water supply, as, moreover, the odor was scarcely perceptible, it was believed unnecessary to transfer to another pit. While the men were at the fair grounds the fluids disappeared completely and the same pit was used until the middle of November. The cost of the pit, including the laying of 300 feet of sewer tile, was $22.50.

Three rim-flushed hoppers were placed in a corner of the sleeping quarters for the use of the men, and one was provided for the officers in a closet adjacent to the quarters building. The cost of these hoppers and the necessary piping was $62.83. The cost of the system for the first 6 months of operation and the per capita cost per day are shown in Table 9. In computing these costs the entire cost of the cesspool and the labor of installation have been charged off in 311 days, the time the first site was occupied. The proportional costs for the first 183 days were figured at the rate thus indicated.

TABLE 9.—*Total per capita cost of sewage disposal from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

Proportional cost of cesspool	$13.06
Depreciation of hoppers and piping	20.93
Proportion of cost of installation	7.22
Total cost for six months	41.21
Total number of convict calendar days from Jan. 10 to July 10, 1916	7,174
Cost of sewage disposal per calendar day	$0.0057

GARBAGE DISPOSAL.

Prior to the opening of the experimental camp it was customary in the other camps of the county to collect the garbage in the kitchen in open pails and to dump it later into uncovered receptacles, usually of wood, at a short distance from the buildings. When a sufficient amount had accumulated in these it was fed to hogs, of which every camp had a number. Strong recommendations for a change in these methods were made by the sanitary officer representing the Public Health Service, but during the first month of operation the same methods were employed in the cooperative camp. About the middle of February covered metal receptacles were substituted for the open ones, and an incinerator of the barrel type [1] made of field stone and clay was constructed for the destruction of the solid wastes. However, though the conditions around the pigpen were most offensive at times, and though the representatives of the Federal bureaus did all in their power to have the hogs removed, their efforts were not successful until April 21, when the nuisance was abolished largely because the table waste had been so reduced that there was no longer enough to keep the hogs alive. From that date until the termination of the cooperative arrangement the waste was disposed of partly by incineration and partly by trading with a neighboring farmer for but-

[1] For description, see Bulletin No. 414, U. S. Department of Agriculture, p. 103.

termilk and milk. When representatives of the Office of Public Roads returned to the county to observe the moving of the camp it was found that the hogs had been installed again, this time, however, in a pen somewhat more removed from the quarters than the first one. The results of this phase of the experiment, therefore, can not be considered as fully successful.

The incinerator (Plate VI, fig. 2) was constructed by the representative of the Public Health Service, assisted by the blacksmith's helper, a convict, at a time when there was nothing else to do. The convict's time had been charged to other work and no charge has been entered for the incinerator. As no other phase of the garbage disposal involved any tangible expense, this item has not been considered in determining the cost of the camp.

CLOTHING.

The clothing used was of the same character as that provided in the other camps of the county, and it was supplied in approximately the same amount. The accuracy of the records of the cost of this item of maintenance was impaired somewhat by the fact that the clothes sent to the laundry at the Bellwood Barracks were not always returned. In a number of instances the condition of the garments which were returned was far below that of those sent. In other cases it is possible that the exchange was advantageous. No estimate can be made of the loss or gain due to this cause, but it is considered that the net result probably was a loss to the experimental camp. The records and inventories made at the camp, however, were made with judgment and care, and the results are given in Table 10, which also includes a statement of the per capita costs.

TABLE 10.—*Inventory and per capita cost of clothing, Fulton County, Ga., Experimental Convict Camp (1916).*

Item.	Unit cost.	Value of items purchased or acquired first 6 months.	Inventory value July 10, 1916.	Value used.	Number of convict calendar days.	Cost per convict per calendar day.
Pants.....dozen..	$11.25	$154.25	$108.00	$46.25	7,174	$0.0064
Coats.....do....	18.00	37.00	33.00	4.00	7,174	.0006
Shoes.....pairs..	2.00	120.00	52.00	68.00	7,174	.0096
Undershirts.....dozen..	2.15 1.08	14.88	9.63	5.25	7,174	.0007
Drawers.....do....	4.12 1.08	24.62	1.22	23.40	7,174	.0032
Sole leather.....pounds..	.43	9.89	3.01	6.88	7,174	.0009
Socks.....pairs..	.07	3.68	.70	2.98	7,174	.0004
Night shirts.....dozen..	8.50 3.50	50.38	4.09	46.29	7,174	.0064
Shirts.....do....	7.25 3.50	107.67	28.49	79.18	7,174	.0110
Oil coats.....do....	25.00	12.50	6.25	6.25	7,174	.0009
Caps.....do....	3.00	5.50	.....	5.50	7,174	.0008
Thread.....do....	.50	1.13	.....	1.13	7,174	.0002
Towels.....do....	.50	.80	.....	.80	7,174	.0001
Total.....	.....	542.30	246.39	295.91	7,174	.0412

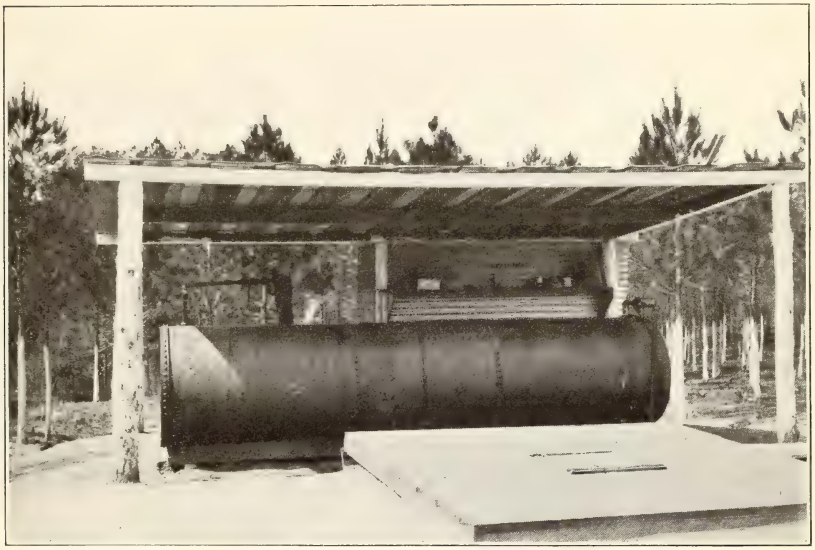


FIG. 1.—AIR TANK AND WELL, EXPERIMENTAL CAMP.

FIG. 2.—BATH TENT IN REAR OF QUARTERS, EXPERIMENTAL CAMP.

FIG. 1.—FLOWER BED, EXPERIMENTAL CAMP.

FIG. 2.—INCINERATOR, EXPERIMENTAL CAMP.

FIG. 1.—INTERIOR OF QUARTERS, EXPERIMENTAL CAMP, SHOWING DOUBLE-DECK IRON BEDS.

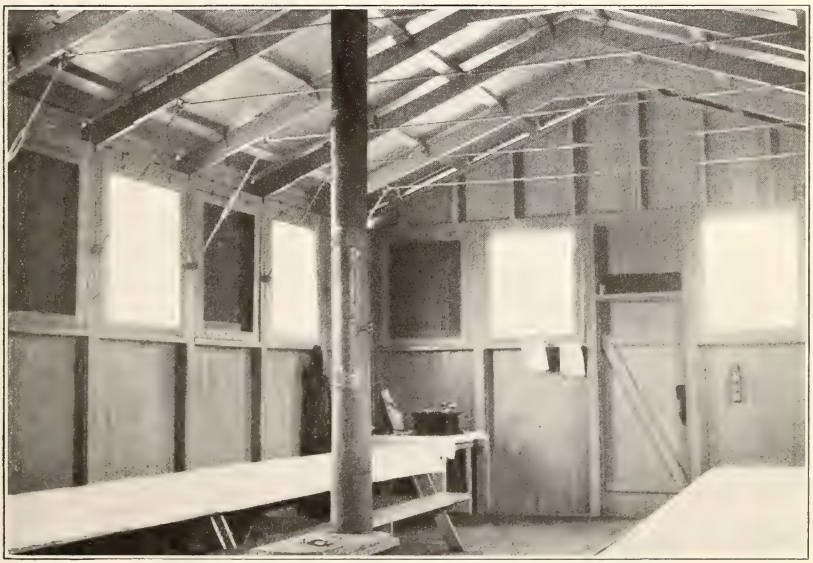


FIG. 2.—INTERIOR OF DINING ROOM, EXPERIMENTAL CAMP.

LAUNDRY.

All laundering was done at the Bellwood Barracks, where a laundry was provided to which was sent clothing from all the county camps. Once each week the laundry truck called for and delivered the camp wash. The method was a good one from a sanitary standpoint, but it is doubtful whether it resulted in true economy; and, as has been stated, its effect on the cost records kept at the experimental camp was to render their accuracy somewhat doubtful.

The value of the laundry buildings and equipment was estimated at $3,609.76. The plant was operated by a laundry engineer whose salary was $60 per month, assisted by four convicts at $0.77 per working day. The expense for soap during the first six months' operation of the experimental camp was $72; for oils and grease, $36 and for coal, $397.44. The value of the laundry truck was $900, and depreciation was estimated at the rate of 33.33 per cent per year for the period from January 10 to July 10. The salary of the chauffeur was $60 per month; and gasoline, oils, and repairs for the machine amounted to $180 for the period of six months. The total costs of the laundry and the costs per convict per day are summarized in Table 11.

TABLE 11.—*Total and per capita costs of laundry, Fulton County, Ga., Experimental Convict Camp (1916).*

	Cost for 6 months, all camps.
Interest on buildings and equipment, value $3,609.76 at 6 per cent per year	$108.29
Depreciation of buildings and equipment estimated at 10 per cent per year	180.49
Interest on laundry truck, value $900, at 6 per cent per year	27.00
Depreciation of laundry truck estimated at 33.33 per cent per year	150.00
Chauffeur's salary	360.00
Gasoline, oil, grease, and repairs to truck	180.00
Laundry engineer's salary	360.00
Soap and laundry material	72.00
Oil, waste, etc., for laundry machinery	36.00
Coal, 138 tons at $2.88	397.44
Convict labor	450.00
Total cost of laundry for all camps, six months	2,321.22
Ratio of population of experimental camp to total county population	.07
Total cost of laundry for experimental camp	$162.49
Total number of convict calendar days from Jan. 10 to July 10, 1916	7,174
Cost of laundry per convict per calendar day	$0.0226

FURNITURE AND EQUIPMENT.

The beds and mess tables (see Pl. VII and detached appendix plate) used in the camp represent a distinct advance in point of convenience, suitability, and sanitary qualities over those in use in the large majority of camps in the State and county.

Beds.—The beds were double-decked cots constructed of steel angles, and were provided with a wire-link fabric attached to the

frame by means of helical wire springs to support the mattress. Upper and lower cots were 6½ feet in length and 2½ feet in width. The lower frame was 18 inches from the floor and the upper one was 2½ feet above the lower. The metal frames were coated with aluminum paint and the wire fabric was galvanized to prevent rusting. Each double-deck cot cost $5.03 f. o. b. Atlanta.

Ticks filled with straw served for mattresses with very satisfactory results in point of cleanliness and comfort. It is believed that mattresses of this kind are more suitable for convict camps than the more espensive hair and cotton mattresses. The rest of the sleeping equipment consisted of an allowance of one straw-filled pillow tick, two pillow slips, four sheets of unbleached muslin, and three or four blankets for each convict.

Mess tables.—The mess tables with combined benches were constructed by the county's carpenters at the Bellwood Barracks according to plans supplied by the Office of Public Roads and Rural Engineering, and published in Bulletin No. 414 of the United States Department of Agriculture. (See detached appendix plate.) Six of these tables were constructed for the camp and, in the interest of neatness, white oil cloth was provided as a covering. The total cost of labor and materials for the tables was $20.15 and for the oil cloth, $5.85. A complete list of the furniture and equipment purchased from January 10 to July 10 is given in Table 12, which also shows the unit cost and estimated depreciation of each article.

TABLE 12.—*List of furniture and equipment purchased from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

	Depreciation.
18 wall lamps at 75 cents each	$0.72
6 lanterns at $4 per dozen	.70
7 lanterns at $4.50 per dozen	.75
2 small glass lamps at 20 cents each	.15
20 wall-lamp globes at 75 cents per dozen	.45
24 lantern globes at 50 cents per dozen	.50
5 lamp chimneys at 50 cents per dozen	.21
17 10-quart galvanized buckets at $3.90 per dozen	4.25
4 2½ by 6 foot single cots at $6.50 each	2.00
23 double-deck cots at $5.03 each	25.15
6 cotton mattresses at $3.75 each	2.00
240 bed sheets at 27 cents each	9.04
61 pillow slips at 17½ cents each	2.15
214 blankets at 87½ cents each	80.72
50 blankets at 95 cents each	23.95
74 pillow ticks at 18 cents each	9.65
50 mattress ticks at 72 cents each	5.04
1,000 pounds straw for ticks at $11 per ton	5.50
6 combined mess tables and benches at $3.36 each	1.95
3 rolls oil cloth (for tables) at $1.95 each	4.39
10 armchairs at $1 each	2.00

	Depreciation.
1 flat-top desk at $10	$0.25
6 wood stoves at $8.75 each	13.13
6 cuspidors at $7 per dozen	.50
1 crate toilet paper at $6.25	3.93
5 gallons disinfectant at 45 cents per gallon	2.25
1 platform scale at $19	.50
1 butcher's spring scale at $3.50	.25
8 brooms at $4.50 per dozen	1.20
6 brooms at $3.60 per dozen	1.34
100 feet ½-inch garden hose at $8.50	1.25
60 pounds screen wire (for fly traps) at 2½ cents per pound	1.50
4 packages tacks (for fly traps) at 2½ cents per package	.10
25 sheets fly paper at 2 cents each	.50
1 garbage can at $1.50	.38
1 garbage can at $3.30	.82
Total depreciation in 6 months	209.17

As the total number of convict calendar days from January 10 to July 10 was 7,174, the cost of furniture and equipment per convict per calendar day was $0.0291.

KITCHEN AND MESS EQUIPMENT.

Table 13 gives a complete list of all kitchen and mess equipment used in the camp, the general character of the equipment being indicated by the unit costs which are attached to each article. A statement of the depreciation of each article during the period from January 10 to July 10, 1916, also is given:

TABLE 13.—*List of kitchen and mess equipment purchased from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

	Depreciation.
22 china dinner plates at $1,50 per dozen	$0.77
11 china cups at 75 cents per dozen	.05
10 china saucers at 75 cents per dozen	
15 tin plates at 21 cents per dozen	.26
28 knives at 35 cents per dozen	.58
35 forks at 35 cents per dozen	.76
28 teaspoons at 10 cents per dozen	.16
22 tablespoons at 20 cents per dozen	.23
35 enameled plates at $1.50 per dozen	
49 pint tin cups at 10 cents per dozen	.41
21 two-quart dinner buckets at 54 cents per dozen	.20
15 four-quart dinner buckets at $2.20 per dozen	1.50
3 three-quart dinner buckets at 80 cents per dozen	.10
6 sirup pitchers at 20 cents each	
20 dippers at 5 cents each	.62
2 three-gallon tin coffee pots at $1.20	1.45
1 two-gallon enamel coffee pot at 95 cents	.37
4 five-gallon milk cans at $1.90	.55
1 stock pot (4 gallons) at $2.50	.55
1 stock pot (5 gallons) at $5	1.25
1 stock pot (10 gallons; old)	.75

	Depreciation.
2 bread pans (12 by 24 inch, sheet iron) at $1.50 each	$1.25
2 bread pans (24 by 24 inch, sheet iron) at $1.75 each	.20
4 cooking spoons at 20 cents each	.45
1 ladle at 35 cents	.12
2 cooking forks at 10 cents each	.18
2 iron frying pans, 12 inches in diameter, at 35 cents each	.15
1 iron frying pan, 10 inches in diameter, at 25 cents	.07
1 enamel stew pan (1 gallon) at $1.25	1.20
1 kitchen range (second hand, $25)	1.00
4 dish pans, 18 inches diameter, at $1.50 each	.51
10 enamel dish pans at 70 cents each	.32
38 cans potash at 5½ cents each	2.09
102 bars brown soap at 2¾ cents per bar	1.48
1 one-half bushel measure at 30 cents	.30
1 pint measure at 25 cents	
1 quart measure at 25 cents	
1 one-half gallon measure at 40 cents	
6 galvanized buckets at 43½ cents each	2.11
1 meat grinder	
1 meat saw	
Total depreciation in 6 months	21.99

The cost of this item for each of the 7,174 convict calendar days of the first 6 months of operation was therefore $0.0030.

FUEL AND LIGHT.

The camp was heated by means of five wood stoves, there being two in the sleeping quarters, two in the mess room, and one in the office building. The fuel for these stoves was the wood cut from the right of way, and as it was cut and prepared by the convicts it does not enter as an item into the cost of maintenance. The amount used during the first 6 months was approximately 80 cords.

Light was furnished by kerosene lamps, which were filled and cleaned daily by a member of the camp force. During the first 6 months of operation 470½ gallons of kerosene were used, which, at the price of 11½ cents per gallon, amounted to $54.10.

Table 14 gives the complete costs of fuel and light chargeable to the maintenance of convicts and also the cost per man per calendar day.

TABLE 14.—*Costs of fuel and light from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

470.5 gallons kerosene, at 11½ cents per gallon	$54.10
6 searchlights, at $1.535 per light	9.21
9 dozen boxes matches	.80
Total cost from Jan. 10 to July 10	64.11
Total number of convict calendar days from Jan. 10 to July 10	7,174
Cost per convict per calendar day	$0.0089

SUBSISTENCE.

Food was provided and served to the convicts in accordance with eight diet tables designed by the United States Public Health Service. These tables, 15 to 22, inclusive, were so arranged as to provide a maximum amount of nourishment at a minimum cost.

TABLE 15.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	8	1.064	0.120	5.816
Corn meal	8	.736	.152	6.032
Hominy (or oatmeal)	2	.166	.012	1.580
Salt fat pork	8	.592	5.320	.....
Dried peas	4	.984	.040	2.480
Potatoes	16	.288	.016	2.350
Onions	1	.014	.003	.089
Cheese	3	.776	1.010	.072
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Vinegar	1	.....	.....	.....
Coffee	0.4	.....	.....	.....
Solids	57.2	4.647	8.673	21.252
Calories	.....	527	2,213	2,410

Nutritive ratio, 1:9.1.

Breakfast:

White or Graham biscuit.
Hominy grits (boiled or fried).
Fried salt pork, 3 ounces.
Molasses, 2 ounces.
Sugar, one-half ounce with coffee.
Coffee, two-fifths ounce.

Dinner:

Stewed peas.
Corn bread.
Salt fat pork, 4 ounces (stewed with peas).

Supper:

Potatoes, 16 ounces.
Onions, 1 ounce.
Vinegar, 1 ounce.
Water, 1 ounce.
Bacon, 1 ounce.
} Potato salad.
Cheese, 3 ounces.
Stewed fruit.
White or Graham biscuit.

TABLE 16.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	8	1.064	0.120	5.816
Corn meal	8	.736	.152	6.032
Oatmeal (or hominy grits)	2	.322	.144	1.350
Dried peas	4	.984	.040	2.480
Salt fat pork (plates, backs, bellies, etc.)	8	.592	5.320	.....
Potatoes	12	.216	.012	1.764
Onions	1	.014	.003	.089
Salt fish (herring, mackerel)	5	1.025	.440	.....
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	54.2	4.980	8.231	20.364
Calories	.....	565	2,100	2,309

Nutritive ratio, 1:8.2.

Breakfast:

White or Graham biscuit.
Oatmeal, mush, or grits.
Fried pork, 4 ounces.
Sirup, 2 ounces.
Sugar, one-half ounce, with coffee.
Coffee (1 cup), two-fifths ounce.

Dinner:

Corn bread (from corn meal), 8 ounces.
Stewed peas (from dried peas), 4 ounces.
Boiled salt pork, 4 ounces (boiled with peas).

Supper:

Broiled salt fish.
Lyonnaise potatoes.
Stewed fruit.
White or Graham biscuit.

TABLE 17.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	8	1.164	0.120	5.816
Corn meal	4	.368	.076	3.016
Condensed milk	1	.096	.093	.112
Oleo or fat	1	.012	.830	.....
Rice	2	.160	.006	1.580
Onions	1	.014	.003	.089
Potatoes	24	.432	.024	3.528
Cheese	3	.776	1.010	.072
Eggs	4	.524	.372	.....
Salt fish	5	1.025	.440	.....
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	59.2	4.598	4.974	17.046
Calories	.....	522	1,269	1,933

Nutritive ratio, 1:6.1.

Breakfast:

Corn-meal mush (from 4 ounces corn meal).
Fried potatoes, 8 ounces.
White or Graham biscuits.
Molasses, 4 ounces.
Sugar, one-half ounce, with coffee.
Coffee (1 cup), two-fifths ounce.

Dinner:

Cheese, 3 ounces, / Fried eggs (2) } with bread, as sandwiches.
Fried rice and onions.

Supper:

Broiled salt fish.
Potatoes, mashed, 16 ounces.
Stewed fruit.
White or Graham biscuits.

TABLE 18.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	8	1.064	0.120	5.816
Corn meal	8	.736	.152	6.032
Navy beans	4	.900	.072	2.384
Salt fat pork	8	.592	5.320	.....
Macaroni	2.4	.322	.022	1.778
Cheese	1.5	.388	.505	.036
Cabbage, turnips, other fresh vegetables	12	.168	.024	.576
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	50.1	4.197	8.215	19.455
Calories	.....	476	2,096	2,206

Nutritive ratio, 1 : 9.5.

Breakfast:

Hot wheat cakes.
Fried pork, 4 ounces.
Molasses, 2 ounces.
Sugar, one-half ounce, with coffee.
Coffee (1 cup), two-fifths ounce.

Dinner:

Baked beans, 4 ounces.
Salt fat pork, 4 ounces, baked with beans.
Corn bread (from 8 ounces corn meal).

Supper:

Baked macaroni and cheese.
Cabbage, or turnip, or other vegetable, 12 ounces.
Stewed fruit.
White or Graham biscuit.

Serve pickles with beans and vinegar with cabbage.

TABLE 19.—*Diet with fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
Fresh meat (as purchased)	14	2.000	1.320	.....
White flour (or Graham or whole-wheat flour)	16	2.128	.240	11.632
Rice	2	.160	.006	1.580
Hominy, oatmeal, or corn meal	2	.166	.012	1.580
Potatoes	16	.288	.016	2.350
Turnips	1	.009	.001	.057
Carrots	1	.009	.002	.074
Onions	3	.042	.009	.267
Salt fat pork	4	.296	2.660	.....
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	65.2	5.125	6.266	20.373
Calories	.....	581	1,599	2,310

Nutritive ratio, 1:7.

Breakfast:

Hominy, oatmeal, or corn-meal mush (from 2 ounces meal).
Fried salt pork, 4 ounces.
White or Graham bread or biscuit.
Molasses, 2 ounces.
Sugar, one-half ounce with coffee.
Coffee, two-fifths ounce.

Dinner:

Meat stew:

14 ounces meat.
16 ounces potato.
1 ounce turnips.
1 ounce carrots.
1 ounce onions.

White or Graham bread or biscuit.

Supper:

Boiled rice (from 2 ounces rice).
White or Graham bread or biscuit.
Stewed fruit.

TABLE 20.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	8	1.064	0.120	5.816
Corn meal	8	.736	.152	6.032
Salt fat pork (plates, backs, bellies, etc.)	8	.592	5.320	.....
Navy beans	4	.900	.072	2.384
Potatoes (Irish or sweet)	16	.288	.016	2.350
Salt codfish	5	.950	.020	.....
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	55.2	4.557	7.700	19.415
Calories	.....	517	1,965	2,202

Nutritive ratio, 1:8.3.

Breakfast:
White or Graham biscuit.
Fried pork, 4 ounces.
Molasses, 2 ounces.
Sugar, one-half ounce, with coffee.
Coffee, 1 cup.
Dinner:
Corn bread (from corn meal, 8 ounces).
Stewed beans (from dried beans, 4 ounces).
Boiled salt pork, 4 ounces (boiled with beans).
Supper:
Stewed codfish (milk sauce).
Boiled potatoes, 16 ounces.
Stewed fruit.
White or Graham biscuit.

Fresh green vegetables or fruits, in season, cooked or uncooked, should be added to this diet; also pickles in reasonable quantities.

TABLE 21.—*Diet with corned beef or fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
Fresh fish or corned beef	12	2.028	1.704	.....
White flour (or Graham or whole-wheat flour)	16	2.128	.240	11.632
Hominy, oatmeal, or corn meal	2	.166	.012	1.580
Potatoes	16	.288	.016	2.350
Macaroni	3	.402	.027	2.223
Condensed milk	2	.192	.186	.224
Oleo or fat	0.5	.....	.470	.....
Onions	3	.042	.009	.267
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	60.7	5.273	4.664	21.109
Calories	.....	598	1,190	2,396

Nutritive ratio, 1:6.0.

Breakfast:
Boiled hominy, oatmeal, or corn meal (from 2 ounces dry meal).
Molasses, 2 ounces.
White or Graham bread or biscuit.
Coffee.
Dinner:
Fresh fish, 12 ounces.
Boiled potatoes.
Boiled onions.
White or Graham bread or biscuit.
Or corned-beef hash:
Corned beef.
Potatoes.
Onions.
White or Graham bread or biscuit.
Supper:
Boiled macaroni.
Milk sauce (for macaroni).
Stewed fruit.
White or Graham bread or biscuit.

TABLE 22.—*Diet without fresh meat.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.
	Ounces.	*Ounces.*	*Ounces.*	*Ounces.*
White flour (or Graham or whole-wheat flour)	16	2.128	0.240	11.632
Hominy, oatmeal, or corn meal	2	.166	.012	1.580
Kidney or navy beans	4	.900	.072	2.384
Salt fat pork	8	.592	5.320	.....
Cheese	3	.776	1.010	.072
Onions	2	.028	.006	.178
Cabbage, or other vegetable except potatoes	13	.182	.026	.624
Potatoes	8	.144	.008	1.173
Dried fruit	1.3	.027	.....	.933
Sugar	0.5	.....	.....	.500
Lard	2	.....	2.000	.....
Molasses	2	.....	.....	1.400
Coffee	0.4	.....	.....	.....
Solids	62.2	4.943	8.694	20.476
Calories	.....	560	2,218	2,322

Nutritive ratio, 1:8.3.

Breakfast:

White or Graham biscuit.
Oatmeal, hominy, or corn meal (boiled or fried).
Fried pork, 4 ounces.
Molasses, 2 ounces.
Sugar, one-half ounce with coffee.
Coffee (1 cup), two-fifths ounce.

Dinner:

Boiled cabbage, or other vegetable, 13 ounces.
Boiled salt pork, 4 ounces (cooked with vegetables).
White or Graham biscuit.

Supper:

Dry stewed beans, mashed, 4 ounces.
Grated cheese, 3 ounces.
Bread crumbs, 3 ounces.
Grated onion, 2 ounces.
} Mix together, roll into loaf. Bake in oven.
Baked potatoes, 8 ounces.
Stewed fruit.
White or Graham biscuit.

It was found necessary, in the course of the experiment, to make a few minor changes in the ration to suit the taste of the men, but in the main the tables were followed as designed. Table 23 shows the weight of the various items of food actually issued from January 10 to August 22, inclusive, the composition of the various foods and the food value consumed during the 6 months in calories per man per day.

TABLE 23.—*Food issued at experimental camp, January 10 to August 22, 1916.*

Foodstuff.	Weight.	Proteins.	Fats.	Carbohydrates.	Cost.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	
Fresh beef	600	98	59	.....	$51.95
Fresh pork	514	69	124	.....	52.85
Salt pork	3,845	285	2,537	.....	502.25
Fresh fish	440	36	9	.....	14.37
Salt cod fish	38	10	.....	.....	6.30
Salt herring	657	135	58	.....	22.83
Salt mackerel	26	4	5	.....	2.44
Flour	7,068	995	134	5,237	163.52
Corn meal	3,167	291	60	2,385	59.31
Macaroni	288	39	3	214	17.54
Grits	207	17	1	169	4.28
Rice	255	20	1	201	11.51
Oatmeal	161	26	11	108	11.89
Beans	820	184	15	487	57.66
Peas	549	135	5	340	15.10
Irish potatoes	2,814	51	14	414	63.54
Cabbage	868	12	1	41	17.40
Turnips	35	4	.....	3	.70
Onions	294	5	1	29	6.46
Collards	352	5	.....	10	3.52
Prunes	87	2	.....	64	6.61
Dried fruit	832	13	18	550	49.98
Condensed milk	103	10	10	11	11.80
Sugar	390	.....	.....	390	27.03
Cheese	271	69	80	10	50.37
Molasses	1,328	.....	.....	733	51.86
Lard	1,707	.....	1,707	.....	175.89
Oleo	22	.....	22	.....	4.29
Salt	416	.....	.....	.....	2.51
Pepper	10½	.....	.....	.....	2.01
Baking powder	331	.....	.....	.....	29.29
Vinegar	184	.....	.....	.....	3.92
String beans	675	21	2	67	13.50
Coffee	163	.....	.....	.....	17.47
Pink beans	130	29	2	77	10.40
Lima beans	100	18	1	66	7.00
Total	.....	2,583	4,880	11,803	1,549.35

Convict days, 8,862.
Calories per day, 51,178.
Cost per 1,000 calories, $0.033.
Cost per calendar day, $0.175.

The food was purchased by the county purchasing agent upon requisition made by the deputy warden and approved by the county warden. Perishable articles were purchased as used, but staples were kept on hand at all times. All food was inspected upon receipt at the camp to ascertain that it complied in quality and quantity with that ordered. In only a few instances were any discrepancies noticed and these were corrected at once.

A system of weighing and checking all food used was inaugurated and maintained, and this practice, coupled with the selection of the most efficient foods, is responsible for the low cost of subsistence.

The average cost of food furnished to convicts during the first six months, as shown by the detailed monthly report, was $0.175 per convict per calendar day. As an indication of the manner in which this food compared in cost and quality with that supplied by the county to the other county camps, Table 24 shows the character, amount, and cost of the rations furnished at the experimental camp from August 1 to August 22, inclusive, and the similar information regarding that served at the Lakewood fair grounds from August 23

to September 30, when the convicts were withdrawn from Government supervision. The rations listed in the second section of the table represent very closely the method of feeding followed by the county in its other camps. By comparing the two rations it is evident that while the calorific value of the ration served by the county was only about one-sixth greater than that supplied in the Government camp, the cost of the former for each 1,000 calories contained in the food was about 30 per cent greater than the latter. That the excess food value furnished by the county ration was unnecessary is shown by the fact that the convicts at the experimental camp, when questioned, invariably expressed themselves as fully satisfied with the character and amount of food supplied to them, and the greater efficiency of the foods comprising the diet of the experimental camp is evidenced by the lower cost per 1,000 calories.

TABLE 24.—*Comparison of cost of convict ration from August 1 to 22, 1916, inclusive, under Government supervision, and from August 23 to September 30, inclusive, under county supervision.*

Under Government supervision.				Under county supervision.			
Item.	Quantity used.	Unit cost.	Cost.	Item.	Quantity used.	Unit cost.	Cost.
Salt pork.....pounds..	409	.145	$58.25	Salt pork.....pounds..	1,261	.145	$182.85
String beans.....do....	75	.02	1.50	Green beans.....do....	90	.02	1.80
Salt herring.....do....	84	.036	3.02	Salt herring.....do....	216	.036	7.78
Flour.....do....	610	.025	15.25	Flour.....do....	340	.025	8.50
Meal.....do....	270	.02	5.40	Meal.....do....	1,176	.02	23.52
Macaroni.....do....	32	.0575	1.84				
Navy beans.....do....	67	.0725	4.86				
Peas.....do....	50	.0275	1.38	Peas.....do....	170	.0275	4.68
Rice.....do....	20	.045	.90	Green corn.....do....	182	.20	36.40
Potatoes.....do....	195	.02	3.90	Sweet potatoes....do....	254	.02	5.08
Lima beans.....do....	40	.07	2.80	Lima beans.....do....	260	.07	18.20
Grits.....do....	20	.02	.40				
Pink beans.....do....	40	.08	3.20				
Oatmeal.....packages..	15	.0775	1.16				
Condensed milk....cans..	12	.075	.90				
Sugar.....pounds..	34	.08	2.72	Sugar.....do....	57	.08	4.56
Cheese.....do....	31	.17	5.27				
Coffee.....do....	18	.11	1.98	Coffee.....do....	118	.11	12.98
Molasses.....gallons..	14	.32	4.48	Molasses.....gallons..	11½	.32	3.68
Dried fruit.....pounds..	77	.07	5.39	Dried fruit.....pounds..	63	.07	4.41
Lard.....do....	196	.11	21.56	Lard.....do....	114	.11	12.54
Baking powder.....cans..	36	.065	2.34	Baking powder....cans..	78	.065	5.07
Salt.....pounds..	40	.006	.24	Salt.....pounds..	73	.006	.44
Pepper.....do....	2	.19	.38	Pepper.....do....	1	.19	.19
Vinegar.....gallons..	2	.19	.38	Vinegar.....gallons..	1	.19	.19
Total cost.....			149.50	Total cost.....			332.87
Total calories.....			4,425,130	Total calories.....			7,503,680
Total number convict days.....			864	Total number convict days.....			1,260
Cost of food per convict day.....			$0.1731	Cost of food per convict day.....			$0.2642
Cost per 1,000 calories.....			.034	Cost per 1,000 calories.....			.043

MEDICINE AND MEDICAL ATTENTION.

The county employs a regular physician to care for the health of the inmates of the county chain gangs and other institutions, and the experimental camp was included among the institutions under his care. His salary was $2,400 per year and in addition he was

allowed the use of an automobile at an approximate cost of $250 per year. He made no regular visits to the camp, but always responded promptly when called; and it is probable, considering the populations of the various institutions, that the experimental camp received its full proportion of his services. As the average population of the experimental camp was approximately 7 per cent of the population of all institutions, it would seem that a fair estimate of the expense of the doctor's services to the camp would be 7 per cent of his salary and the cost of operating his automobile. For the first six months of operation this would amount to $92.75.

The character of medicine and the equipment of surgical instruments kept at the camp, the cost of medicine used from January 10 to July 10, and the depreciation of instruments, etc., during that period, are given in Table 25.

TABLE 25.—*Medical and surgical equipment of the Fulton County, Ga., Experimental Convict Camp, the cost of medicine used, and depreciation of instruments, January 10 to July 10, 1916.*

Article.	Amount or number.	Unit cost.	Cost.	Expense of use and depreciation.
Tincture of capsicum ..... ounces	10	$0.63	$0.39	$0.23
Alum ..... pounds	4	.06	.24	.24
Absorbent cotton ..... roll	1	.17½	.17	.17
Do ..... pound	1	.25	.25	.....
1 inch by 5 yards adhesive plaster ..... spool	1	.30	.30	.30
Adhesive plaster ..... yards	10	.05	.50	.03
4 per cent aqueous solution boric acid ..... ounces	2	.12½	.25	.....
3 per cent alcoholic solution iodine ..... do	2	.12½	.25	.25
Aromatic spirits of ammonia ..... do	2	.07½	.15	.15
Aspirin tablets, 5 grains	100	.90	.90	.....
Enameled basin	1	.60	.60	.....
3 per cent bicarbonate of soda in petrolatum ..... ounces	6	.05	.30	.....
Bismuth subcarborate tablets, 5 grains	100	.91	.91	.91
Boric acid ointment ..... ounces	8	.90	.45	.....
Brown's-mixture tablets	500	1.76	.88	.66
Calomel and soda tablets, ½ grain	100	.12	.12	.....
Catgut sutures, assorted ..... tubes	3	.20	.60	.....
Soft rubber catheters	2	.20	.40	.40
Chloroform liniment ..... ounces	16	.75	.75	.75
Compound cathartic pills ..... do	4	1.34	.33	.33
Do	500	.21	1.05	.28
Eosol ..... pint	1	.34	.34	.08
Eye cup	1	.10	.10	.10
Gauze bandage, 3 inches by 10 yards ..... roll	1	.10	.10	.10
Gauze bandage, 2 inches by 10 yards ..... do	1	.10	.10	.10
Gauze bandage, 1 inch by 10 yards ..... do	1	.10	.10	.10
Grain alcohol ..... pint	½	.60	.30	.30
Plain gauze ..... yards	5	.06	.30	.....
Green soap ..... pound	1	.15	.15	.....
6-inch hæmostats	4	.90	3.60	3.60
Hot-water bag	1	1.00	1.00	1.00
Hypodermic outfit	1	2.00	2.00	.....
Tincture Jamaica ginger ..... ounces	2	.07½	.15	.15
Medicine droppers	2	.05	.10	.10
Medicine glass	1	.10	.10	.10
Mercurial ointment, U. S. P ..... ounces	8	.09	.72	.36
Nail brush	1	.05	.05	.05
Opal silk ..... packages	2	.25	.50	.....
Potassium iodide solution ..... ounces	8	.09½	.75	.....
Probe	1	.30	.30	.30
Quinine sulphate tablets, 5 grains	100	1.15	1.15	.86
Rubber tourniquet	1	1.00	1.00	.....
Safety pins, assorted sizes	12	.05	.05	.05
Scalpels	2	.50	1.00	1.00
4½-inch scissors ..... pair	1	.75	.75	.75
Surgical scissors, 6½ inches ..... do	1	1.25	1.25	1.00
Sodium bicarbonate ..... pound	1	.15	.15	.15
No. 1 splints	2	.50	1.00	1.00

TABLE 25.—*Medical and surgical equipment of the Fulton County, Ga., Experimental Convict Camp, the cost of medicine used, and depreciation of instruments, January 10 to July 10, 1916*—Continued.

Article.	Amount or number.	Unit cost.	Cost.	Expense of use and depreciation.
Surgical forceps	1	$0.50	$0.50	$0.50
Surgical needles ..... dozen	1	.60	.60	.....
Sulphate ointment ..... ounces	16	.75	.75	.....
Toothache drops ..... do	1	.25	.25	.....
Epsom salts ..... pounds	8	.06	.48	.48
Do ..... ounces	16	.09	.09	.07
Do ..... pounds	10	.05	.50	.50
Castor oil ..... gallon	1	2.70	2.70	2.70
Do ..... ounces	16	.40	.40	.40
Spirits of niter ..... pound	1	.47	.47	.47
Turpentine ..... pounds	2	.14	.28	.14
Do ..... ounces	4	.10	.03	.03
Do ..... do	8	.32	.16	.16
"Mixed Treatment" pills	300	.45	1.33	1.33
Do ..... box	1	3.65	3.65	.....
Cream liniment ..... ounces	12	.02	.24	.24
Liniment ..... pound	1	.20	.20	.20
Camphorine ..... ounces	4	.02½	.10	.10
Headache tablets	200	.20	.40	.30
Sloan's liniment ..... bottles	6	.67	4.02	.....
Total	.....	.....	44.05	23.57

The total cost of medicine, medical attention, etc., for the six months from January 10 to July 10 is shown by the above figures to be $116.32; and as there were 7,174 convict calendar days in that period, the cost of this item is $0.0162 per convict per calendar day.

TRANSPORTATION OF CONVICTS AND SUPPLIES.

Food, supplies, and equipment were brought to the camp from Atlanta at least once a week by the camp team driven by a hired driver, who was paid at the rate of $1.35 per day for the time he was actually employed and allowed lodging and subsistence free at the camp. Convicts also were transported to and from the camp in the same manner, and a 1-horse team was employed to carry the midday meal to the men on the road. When they were not occupied in any of these ways both driver and team were assigned to the road work, to be employed in such manner as the foreman might direct.

Table 26 contains a statement of the time of the driver and team spent in transporting convicts, food, supplies, and equipment between January 10 and July 10.

TABLE 26.—*Cost of transporting convicts, food, supplies, and equipment from January 10 to July 10, 1916.*

Free driver, 61 days, at $1.592 per day	$243.53
Camp team, 127½ days, at $1.91 per day	$97.07
Cost of transportation January 10 to July 10	$340.60
Number of convict calendar days, January 10 to July 10	7,174
Cost of transportation per convict per calendar day	$0.0475

CONVICT POPULATION.

TERMS, CRIMES, AND CHARACTERISTICS.

The first 17 convicts assigned to the camp were taken from the county camp known as the "honor" camp. It has been mentioned that the inmates of this camp were chosen as a mark of honor for good behavior in other camps, but that they were allowed neither the liberties nor the privileges customarily granted to honor convicts. Subsequently, recruits were drawn from each of the other county camps upon the recommendation of the various deputy wardens that they were worthy of trust and deserving of the honor which promotion to the honor camp implied. The average daily population was 39.2. There is reason to believe that the men selected were not always either the most trustworthy or the most deserving of those eligible. The deputies in charge of the other camps manifested a natural desire to retain their best men. In fact, though the population of the experimental camp formed only about 7 per cent of the total convict population of the county, it is probable that fully 30 per cent would have responded successfully to the same discipline.

Table 27 contains a list of the crimes and sentences of all convicts assigned to the camp, and shows that the maximum sentence was 5 years, the minimum 3 months, and the average 12 months; while the average length of time served in the camp was about 6 months. It will be observed also that the majority of the crimes are such as might be presumed to indicate a lack of honesty and strong sense of honor in the criminals, and that only a comparatively small percentage are crimes of impulse. These facts are more clearly brought out in the analysis of crimes in Table 28.

TABLE 27.—*Terms and crimes of inmates, Fulton County, Ga., Experimental Convict Camp, January 10 to August 22, 1916.*

Prison No.	Crime.	Sentence.	Time to serve when received.
		Years.	*Months.*
1	Burglary	5	3
2	do	5	2½
3	do	3	6
		Months.	
4	do	16	5½
5	do	12	3½
6	do	12	3
7	do	12	3
8	do	12	2
9	do	12	1½
10	do	12	1
11	do	6	6
12	Robbery	12	9
13	do	12	8
14	do	12	5
15	do	12	5
16	Larceny	36	15
17	do	24	13
18	do	24	9½
19	do	16	6
20	do	12	9

TABLE 27.—*Terms and crimes of inmates, Fulton County, Ga., Experimental Convict Camp, January 19 to August 22, 1916.*—Continued.

Prison No.	Crime.	Sentence.	Time to serve when received.
		Months.	*Months.*
21	Larceny	12	7
22	do	12	3
23	do	12	2
24	do	11	8
25	do	10	7½
26	do	10	5½
27	do	10	5
28	do	8	7
29	do	8	5
30	do	8	3½
31	Larceny after trust	10	3½
32	Larceny from house	32	30
33	do	16	9
34	do	12	10½
35	do	12	9½
36	do	12	9
37	do	12	8
38	do	10	8½
39	do	10	7½
40	do	10	6
41	do	8	8
42	do	8	8
43	do	8	8
44	Bought watch on installment plan and sold it	16	2
45	do	8	1
46	Larceny from car	12	8½
47	Appropriated bacon he was delivering and sold it	12	6
48	Kept money collected in trust	12	2½
49	Stealing	12	6½
50	Gaming	14	11
51	do	12	6½
52	do	12	1
53	do	12	1
54	do	12	1
55	do	10	5½
56	do	8	7
57	do	8	7
58	do	8	3
59	do	8	3
60	do	6	5
61	do	6	5
62	do	6	5
63	do	6	3
64	do	6	1
65	do	6	1
66	Selling liquor without license	12	5
67	do	10	8½
68	do	10	3½
69	do	8	6½
70	do	6	5
71	Vagrancy	12	11
72	do	12	8
73	do	10	5
74	Abandoning children	12	1½
75	Carrying concealed weapon	12	8
76	do	8	6½
77	do	8	5
78	do	6	6
79	do	6	3
80	Wife beating	8	4
81	Adultery	12	9
82	Stabbing	12	8
83	do	12	7
84	do	12	7
85	do	12	2½
86	do	12	1
87	do	11	6½
88	do	10	1
89	do	8	7
90	do	8	2
91	do	6	3
92	do	12	7
93	do	3	3
94	Assault and battery	8	7
95	Violation of probation	[1] 4	2
96	Assault to rape	12	11

[1] And 19 days.

TABLE 28.—*Analysis of crimes of inmates, Fulton County, Ga., Experimental Convict Camp, January 10 to August 22, 1916.*

Kind of crime.	Number.
Against property	49
Against the person	15
Against public order	32
Total	96
Percentage against property	51.0
Percentage against the person	15.6
Percentage against public order	33.4
Total	100.0

In view of these characteristics it is somewhat surprising that there were no attempts to escape and that there were only nine offenses against the order of the camp. A list of these offenders is given in Table 29.

TABLE 29.—*Offenders and offenses against the order of the camp.*

Prison No.	Crime for which convicted.	Offense.	Prison No.	Crime for which convicted.	Offense.
46	Larceny from car	Fighting.	96	Assault to rape	Unsatisfactory work.
68	Selling liquor without license.	Do.	72	Vagrancy	Do.
10	Burglary	Do.	30	Larceny	Cursing officer.
12	Robbery	Do.	1	Burglary	Stealing sugar.
71	Vagrancy	Unsatisfactory work.			

The general facts that all inmates were negroes and that practically all were from the city of Atlanta have been mentioned.

OFFICERS: NUMBER, SALARIES, AND DUTIES.

The county warden, as the representative of the State prison commission and the board of county commissioners, was in general charge of all camps and prisoners in the county, and it is estimated that about one-tenth of his attention was devoted to the experimental camp. Five officers under this official were in immediate control of the camp. Their positions and respective salaries were as follows:

	Per month and board.
1 deputy warden	$75
1 camp clerk	50
1 foreman	60
1 foreman	40
1 nightwatchman	40

The deputy warden was the highest camp officer and was responsible for the conduct and discipline of the camp and the satisfactory prosecution of the road work. However, about three-fourths of his time was devoted to the supervision of the road work, and therefore only one-fourth of his salary and the cost of his board have been reckoned in the cost of maintaining the camp.

The camp clerk acted as the deputy warden's assistant in the management of the camp, and in the absence of that officer was in full charge of the camp. It also was his duty to keep all camp records, to prepare all requisitions for supplies with the approval of the deputy, and to receive such supplies when delivered. He was in full charge of the commissary and of the issuing of food and supplies to the cook, foremen, etc. His entire salary and the full cost of his board are properly chargeable against the cost of camp maintenance.

The work of the night watchman is implied by the name. He entered upon his duties each day with the return of the convicts from the road work and remained responsible for the safety of the camp property and the security of the convicts until the force was sent to work again in the morning. His entire salary and the expense of his board are chargeable against the maintenance cost.

The two foremen were in charge of parts of the road work under the deputy warden. Incidentally, of course, they exercised a reasonable surveillance over the convicts, but as the work could not have been carried on successfully with less than two foremen, and as their duties resembled those of foremen in charge of squads of free workmen more closely than those of convict guards, it is believed that their salaries and board are properly chargeable to the construction work.

None of the officers was armed in any way.

The cost of camp supervision for the months from January 10 to July 10 are shown in Table 30.

TABLE 30.—*Costs of camp supervision from January 10 to July 10, 1916, Fulton County, Ga., Experimental Convict Camp.*

Deputy warden, 45¾ days, at $2.724	$124.64
Camp clerk, 183 days, at $1.897	$347.20
Night watchman, 179 days, at $1.568	$280.67
Total cost Jan. 10 to July 10	$752.51
Total number of convict calendar days	7,174
Cost of camp supervision per convict per calendar day	$0.1049

HEALTH OF THE CONVICTS.

All candidates for the camp underwent a thorough physical examination before they were accepted to determine that they had no physical defects or infirmities which would render them unfit for road work or cause them to be a menace to the health of other prisoners. The examinations of the first 48 men assigned were made by an officer of the public health service, the others were examined by the county physician. Convicts too weak to be of service in the camp were refused admittance; others whom the examination showed to be suffering with infectious diseases also were included. Those accepted were little if any above the average

standard of the entire county force in physical condition. This is indicated in a measure by the fact that 35 per cent of those accepted gave a history or showed positive evidence of disease in an infectious form.

The character and amount of the general medical attention received by the inmates after assignment are described under the heading "Medicine and Medical Attention." In August, 1916, the services of the county physician were supplemented by the appointment of a dentist to visit the camps. The cost of this service was small, as the dentist engaged was a recent graduate who was willing to accept the opportunity to acquire experience as part payment for his work. Though this step was taken upon the advice of the officer representing the Public Health Service, the doctor was not appointed until the cooperative arrangement was about to be terminated, and for this reason the small cost does not appear in the statement of medical expense for the first 6 months of operation.

Complete records were kept of the diagnosis, duration, and treatment of each case of illness or injury that occurred in the camp. The analysis of these records contained in Table 31 shows that none of the illness was serious, and also shows the number of days' labor lost on account of the various indispositions from January 10 to July 10 and from July 11 to August 22. The table shows that 31 days were lost on account of sickness during the first inventory period. As there were 7,174 convict calendar days in the period the percentage of time lost on this account was 0.43 of 1 per cent. From July 11 to August 22, the percentage was somewhat larger on account of the large number of injuries.

TABLE 31.—*Analysis of sick record.*

Diagnosis.	January 10 to July 10.			July 11 to August 22.		
	Labor lost on account of—			Labor lost on account of—		
	Injury.	Illness.	Malingering.	Injury.	Illness.	Malingering.
	Days.	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*
Cold		4			1	
Sore eyes	2	1		2		
Kicked by mule	2					
Toothache		3				
Neuralgia		3				
Cramps		3			2	
Overheated		3			5	
Mashed finger	1					
Pain in back	1			1		1
Indigestion				2		
Sore arm	1					
Boil					2	
Biliousness		2			4	
Chills and fever					3	
Cut leg				11		
Rheumatism		5				
Total	7	24		16	17	1

DISCIPLINE AND MORALE.

The methods of discipline contrasted sharply with those practiced in the other camps of the county, State, and section. So far as can be learned, similar methods never have been applied in any convict camp in the South, and for this reason the success of the system is one of the most striking and important results of the experiment which demonstrates conclusively that there is no foundation for the belief that negro convicts are amenable only to the discipline of locks, shackles, and lash.

In this camp no guard was armed and no convict was shackled; the only building locked night or day was the commissary. Plain gray clothing was substituted for convict stripes, and the use of the whip was prohibited. In place of these negative measures order, security, and obedience were obtained by the positive measures of attractive food, light, airy quarters, clean and comfortable beds, kind treatment, and greater privileges. During the day on the work the constant menace of the gun was removed, and the men worked under the foremen as freemen work. Whereas the practice in the other camps is to put the men "on the chain" immediately after the evening meal, in this camp they were permitted to remain outside the buildings, reading, smoking, playing quoits or baseball until dark, or in the mess room to enjoy a phonograph which was provided for them. Saturday afternoons, during the summer, were holidays, and the time was devoted to baseball and other games.

Minor infractions of the rules, disobedience, and unsatisfactory work were punished by demeriting the offender. When the number of such demerits exceeded the established limit the convict was returned to the county headquarters camp to be placed again under the more rigid discipline of one of the other camps. Serious offenses were punished by immediate return to headquarters camp with a recommendation that severe punishment be administered there. Attempted escape would have been punished in a similar manner, but it was unnecessary to administer any punishment for this cause during the entire period of cooperation, and as late as November 23, ten months after the opening of the camp, there still had not been a single attempt to escape.

Eight of the nine offenders listed in table 29 were punished by return to the guarded camp. Convict No. 1 was the camp cook. His offense was committed just before his discharge, and the sugar was not missed until the monthly inventory was taken.

The full measure of the success of the system of discipline is realized when it is understood that no attempt was made to hold the men by rewards of money or allowances of "good time" greater than those granted to other county convicts. The only measure of

this kind was the granting of the customary ration of tobacco. From January 10 to July 10, inclusive, the expense for this privilege was $58.32, the cost of 243 pounds of tobacco at 24 cents per pound. As this expense was distributed over 7,174 convict calendar days, the cost per convict per calendar day was $0.0081. The tobacco was used at the rate of about one-quarter pound per convict per week.

The morale of the force was excellent. With few exceptions the men were content with the treatment they received, and freely expressed their appreciation of it, not only in words, but in a willingness to work and a prompt response to orders, such as is observed seldom in convict camps.

THE CAMP FORCE.

The camp force consisted normally of three men, a cook, a cook's helper, and a "flunky." Under extraordinary conditions, such as immediately after the establishment of the camp when there was much cleaning to be done, it was necessary to increase the number. An average of seven men were thus employed for a period of about 2 weeks in the first 6 months, but for the rest of the time the three men performed all the necessary work. It should be observed, however, that no laundering was done at the camp and that the general camp work was also somewhat lighter than in the majority of camps, because it was not necessary to carry the water and dispose of the wastes by burial. It would have required at least one more camp helper to care for this additional work. During the first 6 months 659 convict calendar days were used on camp work, which represents a loss to the road work of 9.19 per cent.

SANITATION.

The camp clerk was charged with responsibility for the sanitary condition of the camp and the direction of the work of the camp force. The kitchen and mess room were cleaned daily by the cook and his helper, and they presented a clean and neat appearance at all times. The bunk house and other buildings and the grounds were cleaned and kept in order by the camp "flunky." Particular attention was paid to the toilets, spittoons, and bedding, which were kept surprisingly clean. The floors were treated once every 2 weeks with an agglutinative oil dressing which enabled them to be swept daily without raising dust.

Though the interior of the buildings was kept scrupulously clean from the start, the importance of keeping the grounds in the same condition was not realized at first by local officials. They were permitted to become littered with tin cans, paper, wood, and other débris, particularly in the vicinity of the commissary and the corral,

and it was only by systematic coaching and inspection that this condition was improved.

While the camp was in course of construction at the first site an inspection was made by an officer assigned by the Public Health Service, who outlined plans for sanitation. These included the protection of the well which called for the construction of a water-tight concrete casing to extend 4 feet below the surface and 18 inches above the ground, a concrete shield covering the ground around the well for a distance of 3 or 4 feet, and a water-tight cover of matched boards. The well was not constructed exactly in accordance with his instructions, and the protection provided was somewhat inadequate. The concrete casing was extended only 2 feet below and 6 inches above the ground surface, and no shield was provided, but in its place a ditch was dug around the well about 4 feet outside of the casing. The wooden cover was provided, as recommended, and a fence was erected around the well to prevent walking over the cover.

With the coming of the summer the flies became numerous and troublesome. They undoubtedly had their origin in the mule corral and it is probable that their numbers would have been reduced greatly by the application of borax to the manure, as suggested by the Public Health Service, but it was impossible either to convince the county authorities that the corral was the source or to persuade them to try the treatment recommended. It is true that the large surface area of the corral, over the entire extent of which the animal droppings were scattered, might have rendered the complete extermination of the flies impracticable, but the treatment would have bettered the conditions greatly. The screens in the windows and doors did not protect the interiors of the buildings. The flies came in when the doors were opened, and they collected in large numbers, particularly in the kitchen. When, finally, the abatement of the nuisance received the serious consideration of the county authorities, flytraps were constructed and fly paper was used liberally. These measures served to improve the conditions, but this phase of the experiment, at best, can not be regarded as a success.

The failures recited above are mentioned as matters of fact, but it should not be supposed that the sanitary conditions, as a whole, were bad. On the contrary, the camp presented an unusually clean and well-kept appearance, and even in respect to the fly nuisance it is quite likely that the conditions were somewhat better than the average.

The cost of caring for the camp is not reckoned as a part of the cost of maintaining the convicts themselves, and the direction of their labor by the camp clerk is charged under the head of camp supervision.

RECORDS AND REPORTS.

The records and reports of the camp were kept on forms similar to those suggested in United States Department of Agriculture Bulletin No. 414, which are here reproduced. For a full discussion of the purpose of the various forms and the manner of keeping them the reader is referred to the former publication.

Form No. 1.1.

..... CONVICT ROAD FORCE.
(*Name of county or State.*)

REQUISITION.

Requisition No. .....
Camp No. .....

Supplies to be sent to.....
(*Place.*)
Not later than....., 191..
Date of requisition..... 191..

Quantity.	Article.	Quantity issued last month (or week).	Quantity on hand.	Order No.
				(Not to be filled by Supt.)

I certify that the quantities on hand and issued are correctly reported, the above articles are required, and the quantities are not excessive.

Approved: ....., Warden. ....., Supt.

1. Use different colored sheets for requisitions for food supplies and general supplies.
2. Whenever an emergency purchase is made locally, fill out this requisition form covering the purchase, write the word "Emergency" on it, and mail it with the bill to the warden.
3. If the article is unusual, explain the need for it on the requisition.

FORM 1. SIZE, 8 BY 10½ INCHES.

Form No. 1.2.

..... CONVICT ROAD FORCE.
(*Name of county or State.*)

PURCHASE ORDER.

Order No. ..... To Fill Requisition No. ..... From Camp No. .....
....., ..., 191..
(*Name of city or town.*)

Firm name .....
Address .....
Please ship the following articles to .....
....., via.....,
and render the bill on the inclosed voucher form to .....
.....
Signature .....
(*Purchasing Agent or Official in Charge.*)

Quantity.	Name of article.	Contract reference.

FORM 2. SIZE 8 BY 10½ INCHES.

Form No. 1.3. Voucher No.....

.....CONVICT ROAD FORCE.
(*Name of county or State.*)

VOUCHERS FOR SUPPLIES AND SERVICES FURNISHED.

Date, ..., 191..

.....
(*Name of county or State.*)

To.....Dr.

Goods supplied on

Purchase Order No..... Address.....

For Camp No..... .....

(Consult instructions on other side before preparing voucher.)

Contract reference or authority.	Articles or service.	Quantity.	Unit	Unit price.	Amount.		(Leave blank.)
					Dollars.	Cts.	Account.

I certify that the above bill is correct and just, and that payment therefor has not been received.

(Payee sign here).....

Title.....

I certify that the above articles have been received by me in good condition and in the quality and quantity specified, or that the services were performed as stated.

Signature.....Supt.

Approved for $_____ Signature.....Warden.

Paid by check No....., dated....., 191...

FORM 3. SIZE, 8 BY 10½ INCHES.

Form No. 1.4. Sheet No.....

.....CONVICT ROAD FORCE.
(*Name of county or State.*)

INVENTORY OF PROPERTY.

Camp No..... Place....., Date....., 191..

Listed by.....

Quantity.	Item.	Description (Dimensions, materials, etc.).	Date of purchase.	Date received here.	Original value.	Present value.	Condition.
				Total,			

FORM 4. SIZE, 8 BY 10½ INCHES.

Form No. 2.1.

.....CONVICT ROAD FORCE.
(Name of county or State.)

Ration report.

Month of.....

Camp No.....

Place.....

Signature.....
Supt.

Food item.....

Usual ration.....

On hand first of month.....	
Received during month. (Give date of receipt and unit cost of each shipment.)	

Total to be accounted for.....

Issued to—	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Convicts.....																																
Officers.....																																
Waste.....																																
Total issued.....																																

Remarks: (State cause of waste; make statement of amount of food donated and raised, and give dates and manner of use. Food received but later returned should be deducted from amount received during month, and reason for return stated below.)

Should be on hand at end of month.....	
Inventory at end of month.....	
Adjusted total issued to convicts.....	
Adjusted total issued to officers.....	
Average unit cost of food used by convicts.....	
Average unit cost of food used by officers.....	
Total cost of convicts' food.....	
Total cost of officers' food.....	

FORM 5. SIZE, 8 BY 12½ INCHES.

Form No. 2.2.

....., CONVICT ROAD FORCE.
(*Name of county or State.*)

SUMMARY OF QUANTITIES AND COSTS OF FOOD ISSUED.

Month of .....

Camp No. ..... Place ...., Supt.

Item.	Quantity.		Unit.	Unit cost.	Total cost.		Days.	Number persons fed.	
	Con.	Off.			Convicts.	Officers.		Convicts.	Officers.
							1		
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		
							25		
							26		
							27		
							28		
							29		
							30		
							31		
							Number of visitor-food days.		
							Daily cost of food.		
							Per convict.	Per officer.	
Grand total cost.....									

FORM 6. SIZE, 8 BY 12½ INCHES.

Form 2.3.

..... CONVICT ROAD FORCE.
(*Name of county or State.*)

REPORT OF SERVICES AND SUPPLIES OTHER THAN FOOD.

Camp No. .....

Place .....

Signature .....
Supt.

Account .....

Month of ....., 191..

Number of convict days since last inventory to first of month. .....

Number of convict days this month .....

Total number of convict days to date .....

Date.	Item.	Last inventory value plus subsequent purchases to first of month			$
		Purchased during month.			
		Quantity.	Unit cost.	Total cost.	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
Total for month					$
Grand total					$

FORM 7. SIZE, 8 BY 12½ INCHES.

Form No. 3.1.

.....
(*Name of county or State.*)

CONVICT ROAD FORCE.

DAILY REPORT OF CONSTRUCTION.

Name of camp.....
Name of place.....
Name of road.....
Kind of road.....
Date.....
Weather.....
Name of supt.....

FORCE REPORT.

	Title.	Rate per day.	Effective labor days.																	Lost labor days.				
			Rock excavation.	Loose rock excavation.	Earth excavation.	Excavation for culverts and bridges.	Laying pipe.	Mixing and placing concrete.	Quarrying rock.	Crushing rock.	Loosening surface.	Loading surface material.	Hauling surface material.	Spreading surface material.	Sprinkling.	Rolling.	Mixing sand-clay.	Dragging.	Clearing and grubbing.	General.	Bad weather.	Sundays and holidays.	Sick.	Camp duty.	Total.
Superintendence.																								
Hired labor.																								
Convicts.																								
Teams.																								

REPORT OF MATERIALS USED.

Item.	Quantity.	Rate.	Amount.	Account.

PROGRESS REPORT.

Activity.	Worked to-day.		Completed.	
	Station to station.		Station to station.	

FORM 8. SIZE, 8 BY 10½ INCHES.

Form No. 3.2.

.....CONVICT ROAD FORCE.
(*Name of county or State.*)

REPORT OF CONSTRUCTION.

Account....., Month of....., 191..

Name of road.....Kind of road.....Camp No...Place.....Signature.....

Date.	Superintendence.				Hired labor.								Teams.		Convict labor.
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
Total days,															
Wage															Assumed rate.
Board															Assumed amount.
Total rate															Actual rate.
Total amount															Actual amount.

MATERIALS USED.

Item.	Quantity.	Rate.	Cost.	Item.	Quantity.	Rate.	Cost.
Carried forward,				Total cost,			

TABLE OF UNIT COSTS.

Activity.	Quantity.	Units.	Total cost materials.	Assumed labor cost.	Actual labor cost.	Approximate unit cost.	Actual unit cost.	Unit.

FORM 9. SIZE, 12½ BY 16 INCHES.

Form No. 4.1.

....., CONVICT ROAD FORCE.
(*Name of county or State.*)

PRISONERS' TIME SHEET.

Camp No. ..... Place, ... Month of ....., 191..

Signature, ..., Supt.

Prison No.	Name.	Days on road.	Days camp duty.	Days bad weather.	Days of sickness.	Days, Sundays and holidays.	Total number days.
Total carried forward.....							

FORM 10. SIZE, 8 BY 10½ INCHES.

Form No. 4.2.

....., CONVICT ROAD FORCE.
(*Name of county or State.*)

MOVEMENT OF PRISONERS.

Camp No. ..... Place, ... Month of ....., 191..

Signature, ..., Supt.

On hand first day of month.....	.....	
Received during month.....	.....	
Recaptured and returned during month.....	.....	
To be accounted for.....		.....
Discharged.....	.....	
Pardoned or paroled.....	.....	
Died.....	.....	
Escaped during month, and still at large.....	.....	
Sent to.....	.....	
.....	.....	
.....	.....	
Convicts on hand at end of month.....	.....	
Total (should agree with total above).....		.....

Remarks:

FORM 11. SIZE, 8 BY 10½ INCHES.

Form No. 4.3.

....., CONVICT ROAD FORCE.
(*Name of county or State.*)

DAILY REPORT OF SICKNESS.

No. of camp.....
Place.....
Date of illness.....
Day of illness (as 1st, 2d, 3d, etc.).....
Name of convict.....
Of what does the convict complain?.....
What signs of sickness did he show to-day?.....
What treatment was given to-day?.....
Was he seen by the doctor to-day?.....
Doctor's diagnosis to-day.....
Signature of superintendent.....

FORM 12. SIZE, 8 BY 10½ INCHES.

All the reports were prepared without difficulty by the camp clerk, and the information was presented in such form as to render the segregation of costs for the various items herein reported comparatively simple.

A supply of the forms sufficient to serve the camp of 40 men for a period of about 2 years was printed for $95. The cost for the period from January 10 to July 10 therefore was less than $25. As the other duties of the camp clerk were of sufficient importance to have required such an official, even if the records had not been kept, the sole additional expense chargeable to the system of cost keeping for the 6-month period was this cost of $25. To indicate the value of the reports properly kept and used, it is necessary to state only that the saving on food alone made possible by the use of the forms during the period amounted to more than $350.

SUMMARIZED COSTS OF MAINTENANCE.

The various items entering into the maintenance of the convicts have been fully described in the foregoing paragraphs, and the cost of each has been stated on the basis of a convict calendar day. These costs are now summarized in Table 32, which shows that the total cost of maintaining one convict one calendar day during the period from January 10 to July 10 was 55.09 cents.

TABLE 32.—*Cost of maintaining convicts.*

Item.	Cost of maintenance per convict per calendar day.	Proportion of total.	Item.	Cost of maintenance per convict per calendar day.	Proportion of total.
	Cents.	*Per cent.*		*Cents.*	*Per cent.*
Preparation of site	.36	0.7	Fuel and light	.89	1.6
Interest and depreciation on buildings	6.23	12.4	Subsistence	17.47	31.7
Water supply	1.71	3.1	Medicine and medical attention	1.62	2.9
Sewage disposal	.57	1.0	Transportation	4.75	8.7
Clothing	4.12	7.5	Camp supervision	10.49	19.0
Laundry	2.26	4.1	Tobacco	.81	1.5
Furniture and equipment	2.91	5.3			
Kitchen and mess equipment	.30	0.5	Total	54.49	

To obtain the cost of maintaining one working convict one working day, which is equivalent to the wage of the labor, it is necessary to modify the above cost by dividing it by the percentage of time actually applied to the work after deductions have been made for bad weather, Sundays and holidays, camp duty, and sickness. The losses are shown clearly by the camp reports and are given in table 33 in terms of convict days and percentages of the total available time of 7,174 convict days.

TABLE 33.—*Convict labor lost to road work.*

Cause.	Convict days.	Percentage of time lost.
Bad weather	371	5.17
Sundays and holidays	1,056.5	14.72
Camp duty	659	9.19
Sickness	31	.43
Total	2,117.5	29.51

It appears from the above table that only 70.49 per cent of the total time of the convicts in the camp was applied to the road work. Therefore it is evident that the cost of maintaining one working convict one working day is

54.49÷.70.49=77.30 cents.

ROAD WORK.

While the camp was under the observation of the Federal bureaus, that is, from January 10 to August 23, the convicts were employed on three different roads, namely, the Powers Ferry Road, Hemphill Avenue, and Heards Ferry Road. Only on the Heards Ferry Road, where the work consisted largely of road-machine construction, was the anticipated work completed during the period of observation.

Powers Ferry Road.—The work on the road, which occupied the major portion of the time of the men, was done upon a section of the highway 9,900 feet in length, and consisted of grading, guttering, and surfacing with topsoil, together with the construction of incidental drainage structures. The width of right of way cleared was 40 feet. The new road follows approximately the old road bed for a distance of 7,000 feet, the remaining 2,900 feet being in new location. The surrounding country is heavily wooded and very hilly, and owing to right of way conditions and considerations of economy it was impracticable to reduce the maximum grade below 7 per cent, which, however, represented a notable inprovement over the old maximum grade of 12 per cent. The clearing and grubbing amounted to 9 acres. The total amount of excavation was 33,803.6 cubic yards, of which 30,255 cubic yards consisted of residual micaceous clay and 3,548.6 yards of rock, the latter a mica schist. Much of it was fresh and hard, but a small amount was in an advanced state of decomposition. Figure 1 shows a plan and profile of the road as constructed, and the earthwork notes which are shown indicate the character of the construction. The materials of excavation were transported in No. 2½ steel scrapers and dump wagons, the haul varying from a few feet for sidehill construction to a maximum of about 1,000 feet, the average being a little over 600 feet.

Two hundred and eighty-eight linear feet of 15-inch vitrified-clay sewer pipe was placed for drainage purposes, and a concrete bridge consisting of two 14-foot arches was begun at Long Island Creek. Up to the time the Government engineer was withdrawn the excavation for the foundations, consisting of 105 cubic yards of wet sand and clay, had been completed, and 62 cubic yards of concrete had been placed. The stone aggregate was secured from the excavation between stations 63 and 68, and the sand was obtained from the creek and hauled half a mile. Gutters on both sides of the road in all cuts were paved for a width of 3 feet with stone from the excavation, broken by hand to the required size; and 1,500 square yards of the top-soil surfacing had been spread when the experiment was discontinued. The material was obtained from a field near station 2 plus 00 and was hauled an average distance of 1,200 feet.

This work, together with a small amount of miscellaneous work, consisting principally of the moving of a small country store off the right of way, cleaning gutters and repairing washouts, and the Heards Ferry road-machine work constituted the occupation of the convicts from January 10 to July 1, when the Hemphill Avenue construction was begun. Up to August 23, 5 acres of right of way had been cleared and 4,000 cubic yards of earth and 50 cubic yards of rock had been excavated and moved.

Superintendence and free labor.—The road work was under the general supervision of the deputy warden who, though he also was responsible for the conduct of the camp, devoted about three-fourths of his time to the construction. He was assisted by two foremen who were in immediate charge of the work and men and whose entire time is properly chargeable to the road work. The wages paid to these officers are given on page 41. Besides these officials the only other citizens employed on the work were a blacksmith, who received $2 per day and board, and a driver, who was paid at the rate of $1.35 per day and board for the time he was actually employed. The latter was employed primarily for the purpose of transporting men and supplies from Atlanta, but a part of his time was devoted to the construction work.

Teams.—From January to August an average of 12.92 pairs of the county's mules were kept in the stable attached to the camp. They were valued at $600 per pair and it is estimated that they depreciated at the rate of 10 per cent per year. Harness cost $40.50 per double team, and it is estimated that it depreciated at the rate of 25 per cent per year. Actual records of the cost of feed and bedding show that this item amounted to $1.057 per double team per calendar day. No account is taken in this connection of the cost of shoeing, but proper allowance is made for it in connection with the cost of main-

taining the blacksmith shop. Based upon the above figures the summarized cost of one team per calendar day is as follows:

Interest on cost of team at 6 per cent per year	$0.098
Depreciation of a team at 10 per cent per year	.164
Interest on cost of harness at 6 per cent per year	.007
Depreciation of harness at 25 per cent per year	.027
Feed and bedding	1.057
Total cost per calendar day	1.353

The records of the camp show that up to August 10 maintenance was provided for 2,351 team days, and the following table shows the number of team days actually employed and lost:

Number of team days employed	1,661.0
Number of team days idle	244.5
Number of team days lost by sickness	77.5
Number of team days lost by Sundays and holidays	368.0
Total team days to Aug. 10	2,351.0

It is evident, therefore, that the team days actually employed formed only 70.7 per cent of the total number for which maintenance was provided, and the cost of a double team and harness per actual working day therefore was

$$1.353 \div 0.707 = \$1.91.$$

All work teams were driven by convicts except that part of the time of the one free driver which was spent on the road work.

Construction equipment.—Table 34 is a complete list of the construction equipment used in the course of the experiment.

TABLE 34.—*Construction equipment.*

Item.	Number.	Value.	Item.	Number.	Value.
Two-horse wagons	4	$160	Mattocks	27	$8
One-horse wagon	1	30	Wheelbarrows	4	6
No. 2½ wheelers	8	320	Blasting machine	1	15
Small road machine	1	75	Picks	24	24
Steam drill and accessories	1	300	39-pound stone hammers	8	6
Portable boiler	1	350	Miscellaneous repairs, steel, leather, horseshoes, etc		374
Blacksmith outfit and small tools	1	100	Stables, shop, etc		150
Grading plows	2	50			
Axes	24	15	Total		2,008
Short-handled shovels	36	25			

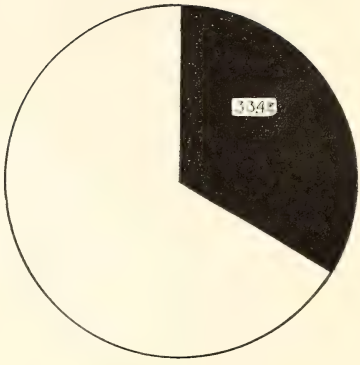
The customary allowances have been made for depreciation of this equipment and the costs have been properly charged as "equipment" to each item of construction in Table 35.

TABLE 35.—*Summary of cost of construction.*

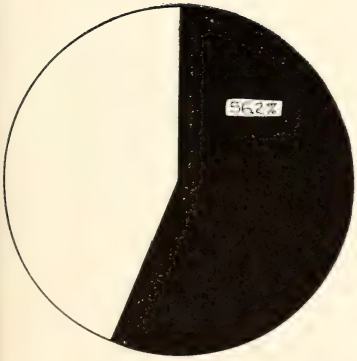
POWERS FERRY ROAD.

	Cost.	Per cent.
Earth excavation:		
Supervision	$442.65	7.1
Teams	2,462.85	39.5
Materials	314.19	5.0
Equipment	334.95	5.5
General expense	356.91	5.7
Convict labor	2,325.26	37.2
Total	6,236.81	100.0
Quantity of excavation, 30,255 cubic yards.		
Cost per cubic yard, 20.6 cents.		
Rock excavation:		
Supervision	193.57	10.0
Teams	296.60	15.5
Materials	376.79	19.5
Equipment	172.00	8.9
General expense	88.00	4.6
Convict labor	800.70	41.5
Total	1,927.66	100.0
Quantity of excavation, 3,548.6 cubic yards.		
Cost per cubic yard, 54.3 cents.		
Clearing and grubbing:		
Supervision	86.87	14.5
Teams	27.07	4.3
Materials	98.62	16.0
Equipment	8.90	1.4
General expense	32.30	5.2
Convict labor	360.41	58.6
Total	614.17	100.0
Area cleared and grubbed, 9 acres.		
Cost per acre, $68.24.		
15-inch vitrified-clay pipe:		
Supervision	2.04	1.6
Materials	109.68	86.5
Equipment	.07	.....
General expense	1.10	.9
Convict labor	14.05	11.0
Total	126.94	100.0
Amount of pipe laid, 288 linear feet.		
Cost per linear foot, 44 cents.		
Concrete masonry:		
Supervision	30.11	10.1
Teams	7.64	2.5
Materials	186.70	62.4
Equipment	1.09	.4
General expense	7.10	2.4
Convict labor	66.38	22.2
Total	299.02	100.0
Amount of masonry, 62 cubic yards.		
Cost per cubic yard, $4.83.		

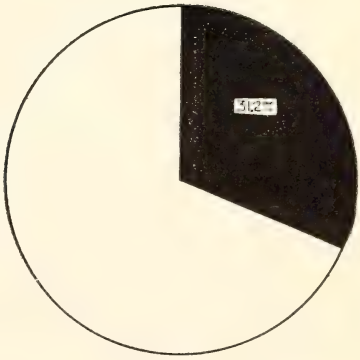
PAVING GUTTERS



TOP SOILING

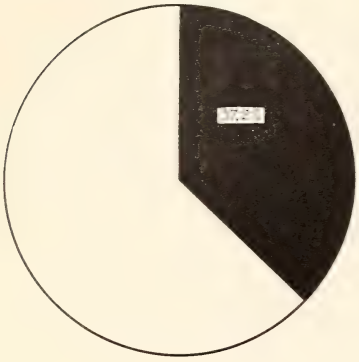


WET EXCAVATION

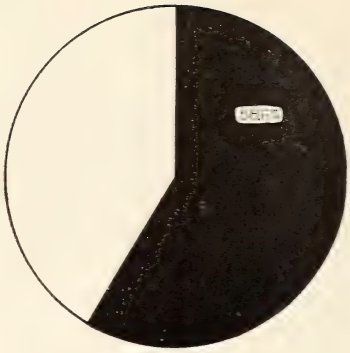


DROP INLETS

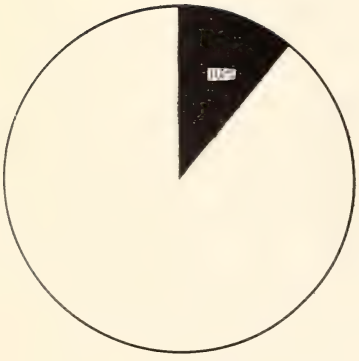
DIAGRAMS SHOWING COMPARISON OF COST OF CONVICT LABOR WITH TOTAL COST OF WORK.



EARTH EXCAVATION



ROCK EXCAVATION



VITRIFIED PIPE

CONCRETE MASONRY

DIAGRAMS SHOWING COMPARISON OF COST OF CONVICT LABOR WITH TOTAL COST OF WORK.

Wet excavation for bridges:	Cost.	Per cent.
Supervision	$16.28	22.5
Teams	10.55	14.5
Equipment	.42	.6
General expense	4.60	6.2
Convict labor	40.61	56.2
Total	72.46	100.0

Quantity of excavation, 105 cubic yards.
Cost per cubic yard, 67 cents.

Construction of drop inlets:		
Supervision	21.73	13.1
Teams	10.86	6.5
Materials	75.95	45.7
Equipment	.04	.....
General expense	5.78	3.5
Convict labor	51.92	31.2
Total	166.28	100.0

Quantity of masonry, 51.6 cubic yards.
Cost per cubic yard, $3.22.

Gutter pavement:		
Suvervision	112.35	13.1
Teams	187.97	21.8
Equipment	4.71	.5
General expense	54.59	6.4
Convict labor	499.78	58.2
Total	859.40	100.0

Area of gutter pavement, 4,747 square yards.
Cost per square yard, 18.1 cents.

Top-soil surface:		
Supervision	7.43	10.7
Teams	34.38	49.0
Equipment	.38	.5
General expense	4.45	6.4
Convict labor	23.43	33.4
Total	70.07	100.0

Area of surface, 1,500 square yards.
Cost per square yard, 4.7 cents.

Miscellaneous work:	
Total cost	$270

RECAPITULATION.

Cost of Power's Ferry Road Work.

Earth excavation	$6,236.81
Rock excavation	1,927.66
Clearing and grubbing	614.17
Culvert pipe in place	126.94
Concrete masonry	299.02
Excavation for bridge	72.46
Drop inlets	166.28
Gutter pavements	859.40
Top-soil surface	70.07
Miscellaneous work	270.00
Total cost	10,642.81

HEMPHILL AVENUE.

Earth excavation:	Cost.	Per cent.
Supervision	$37.90	7.3
Teams	226.67	43.6
Equipment	28.55	5.5
General expense	31.40	6.0
Convict labor	195.23	37.6
Total	519.75	100.0
Quantity of excavation, 4,000 cubic yards.		
Cost per cubic yard, 13 cents.		
Rock excavation:		
Supervision	1.60	5.6
Teams	3.82	13.5
Materials	13.35	46.8
Equipment	1.72	6.0
General expense	.93	3.4
Convict labor	7.02	24.7
Total	28.44	100.0
Quantity of excavation, 50 cubic yards.		
Cost per cubic yard, 56.9 cents.		
Clearing and grubbing:		
Supervision	11.61	10.8
Teams	20.41	19.0
Materials	3.86	3.6
Equipment	1.80	1.7
General expense	6.53	6.1
Convict labor	63.26	58.8
Total	107.47	100.0
Area cleared and grubbed, 5 acres.		
Cost per acre, $21.49.		
15-inch vitrified-clay pipe culverts:		
Materials	11.52	73.4
General expense	.26	1.7
Convict labor	3.90	24.9
Total	15.68	100.0
Amount of pipe laid, 32 feet.		
Cost per linear foot, 49 cents.		

RECAPITULATION.

Cost of Hemphill Avenue work.

Earth excavation	$519.75
Rock excavation	28.44
Clearing and grubbing	107.47
Culvert pipe in place	15.68
Total cost	671.34

HEARDS FERRY ROAD.

Clearing and grubbing:	Cost.	Per cent.
Supervision	$7.70	8.3
Teams	20.71	22.0
Materials	20.64	21.9
Equipment	1.27	1.4
General expense	4.64	4.9
Convict labor	39.05	41.5
Total	94.01	100.0

Area cleared and grubbed, 2 acres.
Cost per acre, $47.

Earth excavation (by road machine):		
Supervision	7.24	6.8
Teams	42.02	39.8
Equipment	12.99	12.3
General expense	5.92	5.6
Convict labor	37.49	35.5
Total	105.66	100.0

Quantity of excavation, 1,667 cubic yards.
Cost per cubic yard, 6⅓ cents.

RECAPITULATION.

Cost of Heard's Ferry Road work.

Clearing and grubbing	$94.01
Earth excavation	105.66
Total	199.67

In these tables the item "general expense" includes the wages and board of foremen on Sundays and holidays, the wages and board of the blacksmith, and the wages and board of the free driver when he was employed on work of a general nature.

The total amount of this expense was $632.02, made up as follows:

GENERAL EXPENSE.

Supervision	$279.35
Blacksmith	333.66
Free driver	19.01
Total	632.02

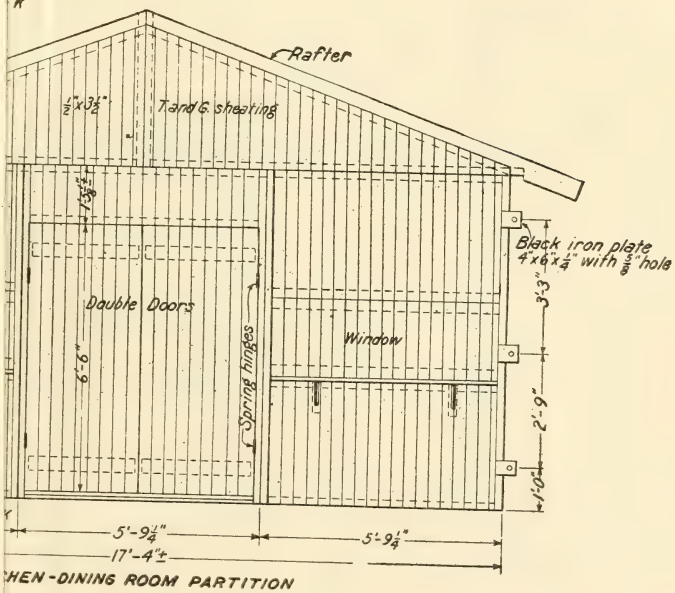
As the only saving which can be made by the use of convict labor must be derived from the labor itself, it follows that the kind of work best adapted to the employment of convicts is that in which the labor cost forms the largest part of the whole cost. To indicate the differences between the various kinds of work performed by the experimental convicts, the column headed "per cent" has been added to the cost tables, and the diagrams shown in Plates VIII and IX have been prepared. They indicate very clearly that, of the various kinds of work performed, clearing and grubbing and excavation are best adapted to the employment of prisoners, and that such work as cul-

vert and bridge construction is to be avoided whenever possible. It should be noted that the exceptionally high percentage in the case of gutter pavements represents only an apparent advantage in this kind of work, as no charge is made for material which ordinarily would form a large part of the cost. In the Atlanta construction the rock was obtained from the excavation without cost other than that of hauling and breaking to size.

The economy resulting from the employment of the convicts in this work and the high degree of efficiency with which they were maintained and organized are proved by the low unit costs of the work, as shown by the tables of costs. That the efficiency of the experimental camp workers was distinctly above that of the other county squads was noted by all who observed them at the Lakewood fair grounds, where they worked side by side with representatives of other camps. Finally, the fact that such costs could be obtained under the severe conditions surrounding this experiment affords the most convincing proof of the soundness of the methods of organization, discipline, and convict maintenance employed.

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
25 CENTS PER COPY

▽



HEN-DINING ROOM PARTITION

U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

GENERAL VIEWS

PORTABLE CONVICT CAMP BUILDING

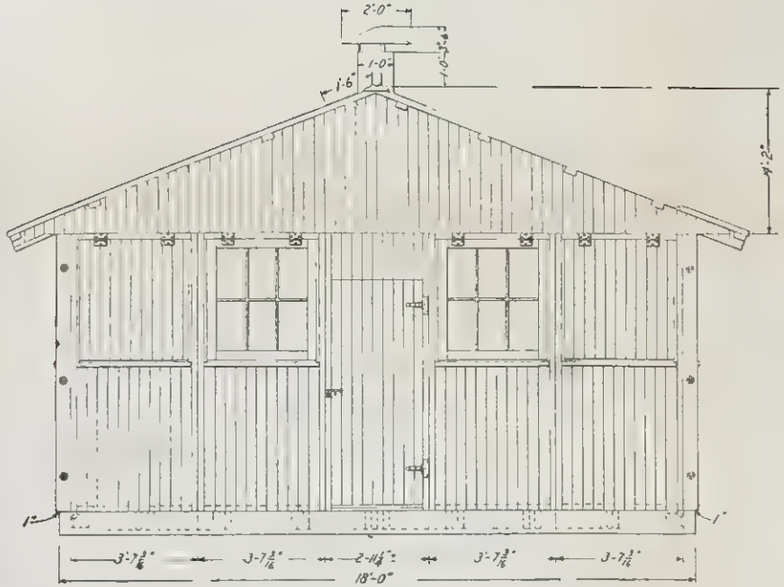
SCALE, ½" = 1'-0"

CORRECT ..... O. S. Fairbanks ..... HIGHWAY ENGINEER

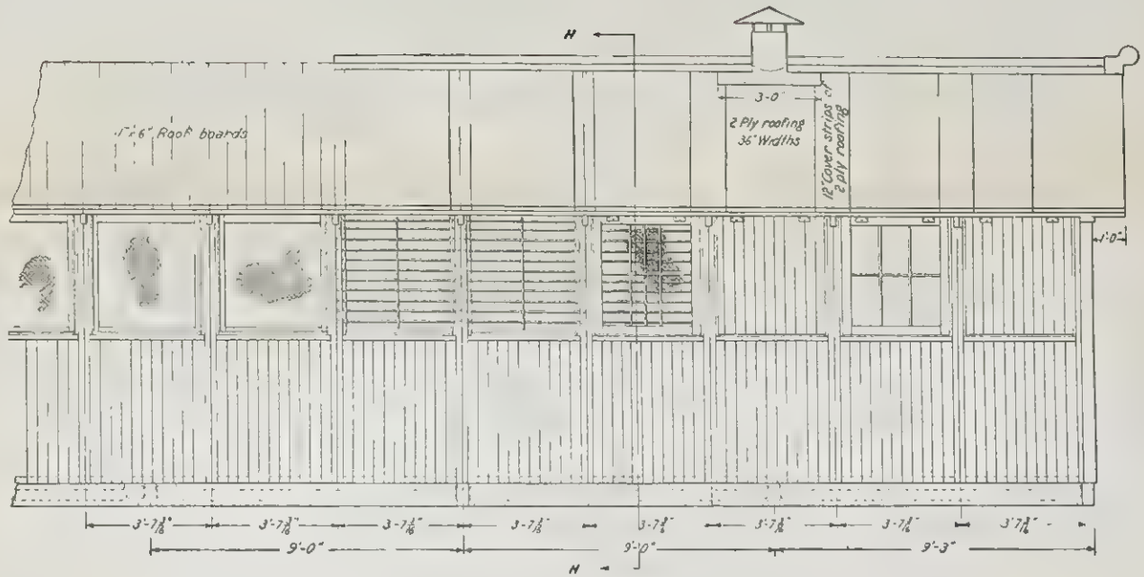
APPROVED ..... J. E. Pennybacker ..... CHIEF, ROAD ECONOMICS

DESIG
TRACE
CHECK

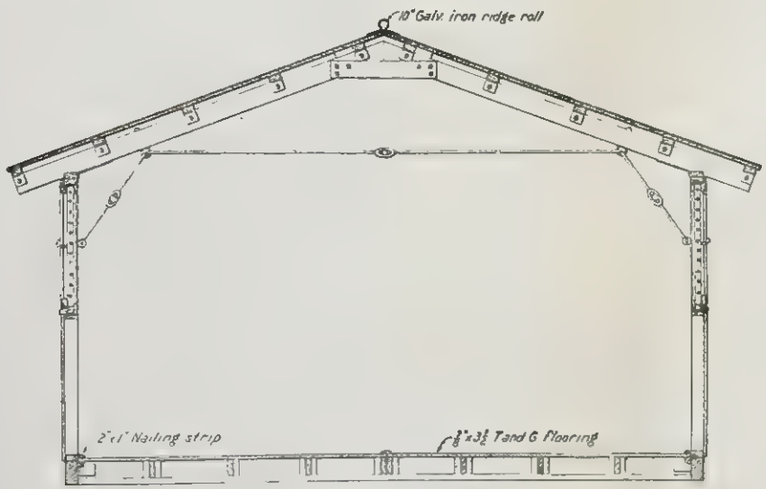
E-57



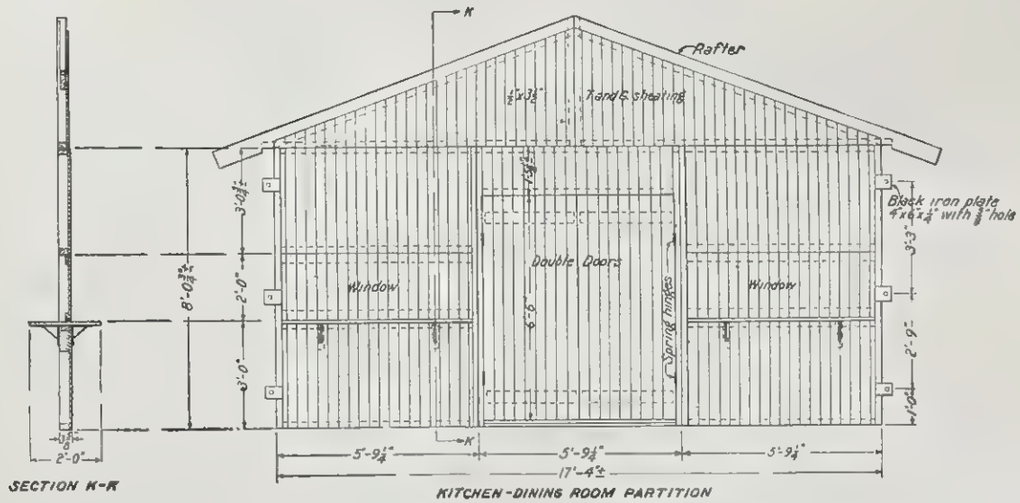
END VIEW



SIDE VIEW



SECTION H-H



SECTION K-K

KITCHEN-DINING ROOM PARTITION

US OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

GENERAL VIEWS

PORTABLE CONVICT CAMP BUILDING

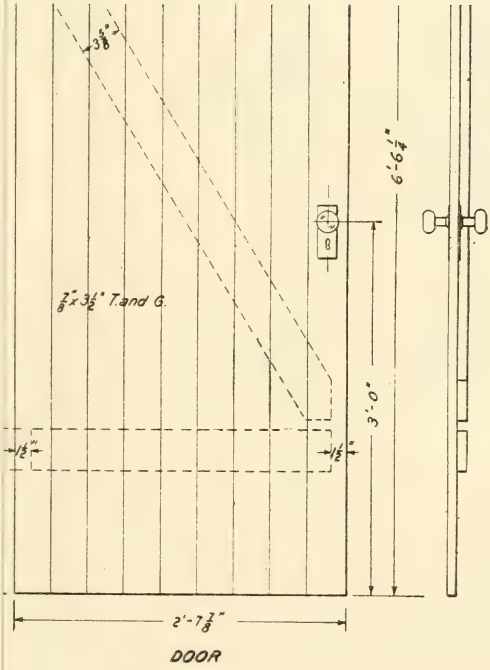
SCALE, ½" = 1'-0"

CORRECT ... H. S. Fairbank ... HIGHWAY ENGINEER

APPROVED ... J. E. Pennybacker ... CHIEF, ROAD ECONOMICS

E-57

DESIGNED BY H. S. Fairbank DATE 2-15-16
TRACED BY J. P. K. DATE 3-24-16.
CHECKED BY H. S. Fairbank DATE 3-24-16.



DOOR

U. S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

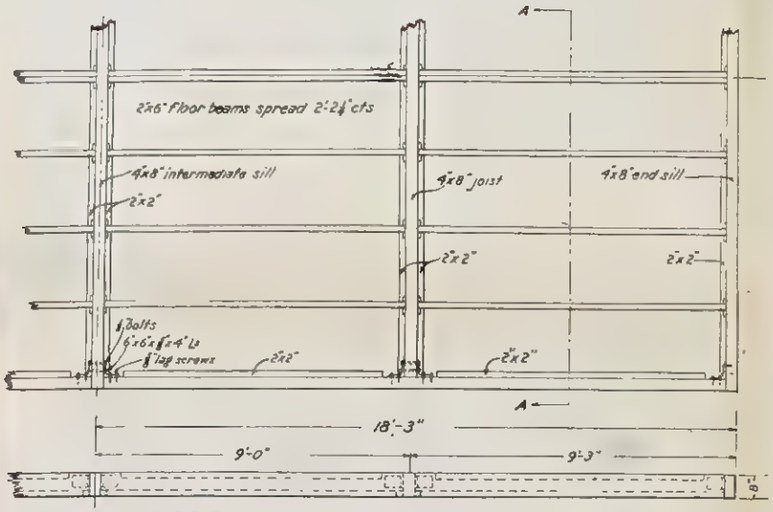
DETAILS
PORTABLE CONVICT CAMP BUILDING

SCALE, 1½" = 1'-0"

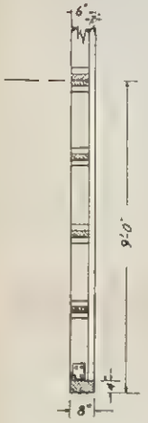
CORRECT ..... H. S. Fairbanks ..... HIGHWAY ENGINEER

APPROVED ..... J. T. Pennybacker ..... CHIEF, ROAD ECONOMICS

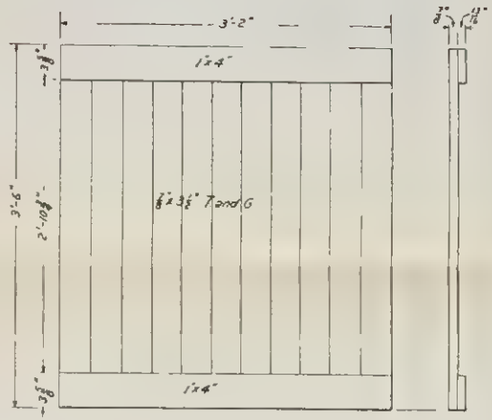
E-58



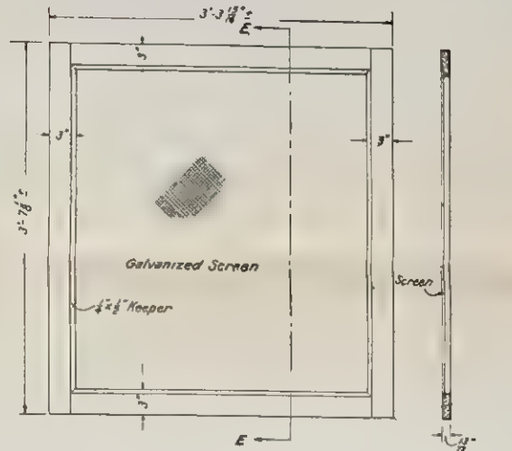
PLAN AND ELEVATION QUARTER SECTION UNDER FLOOR STRUCTURE
Scale ½" = 1'-0"



SECTION A-A

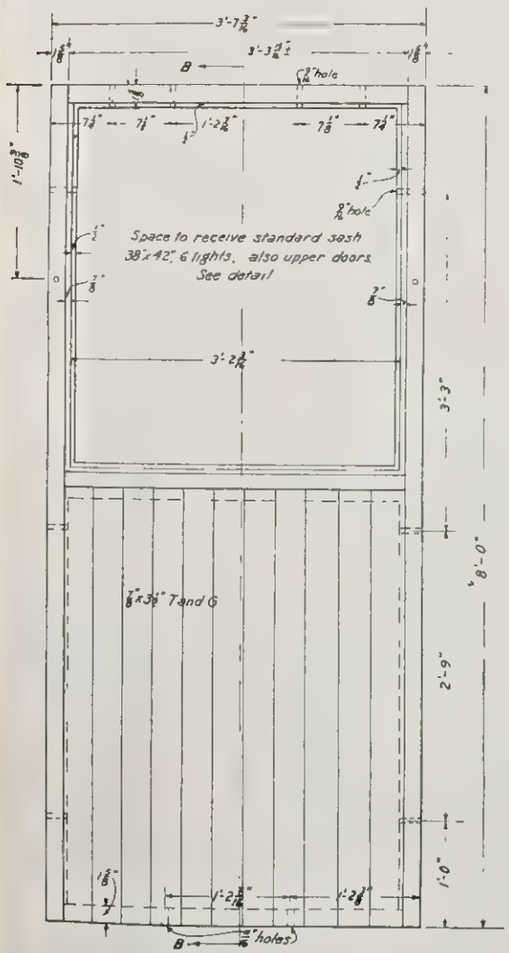


UPPER DOOR

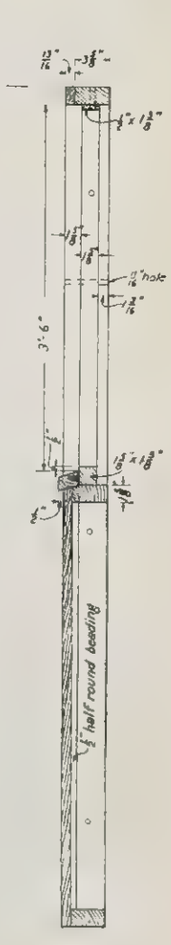


FLY SCREEN

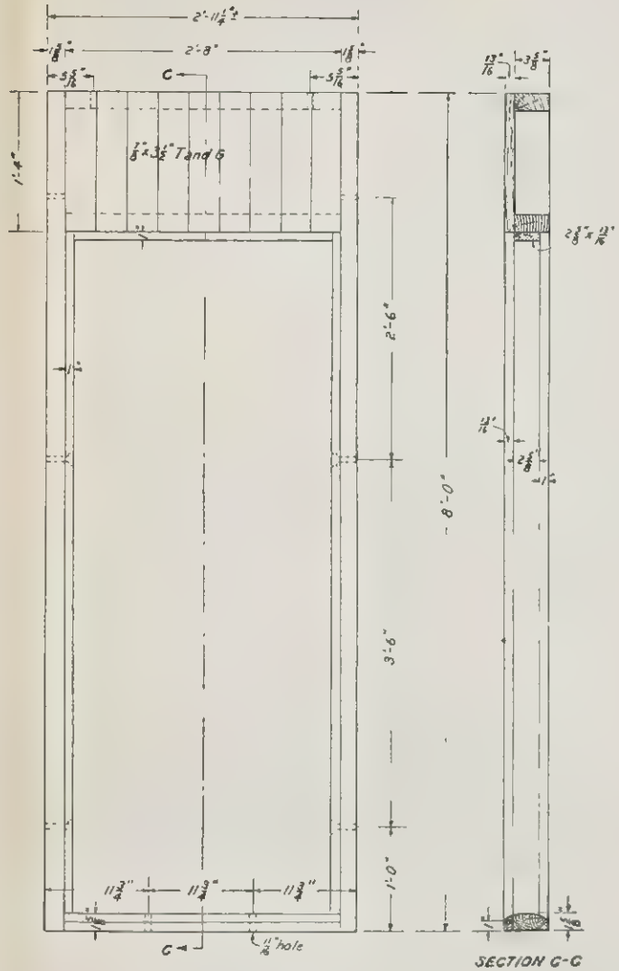
SECTION E-E



ELEVATION SIDE PANEL

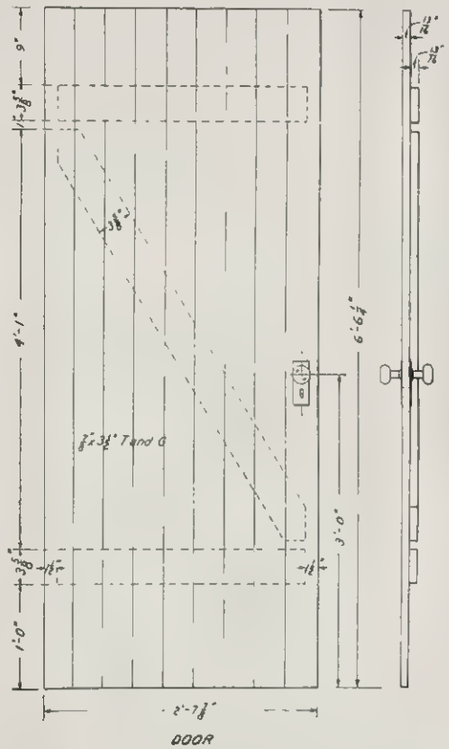


SECTION B-B



ELEVATION DOOR PANEL
Scale, 1½" = 1'-0"

SECTION C-C



DOOR

U S OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

DETAILS
PORTABLE CONVICT CAMP BUILDING

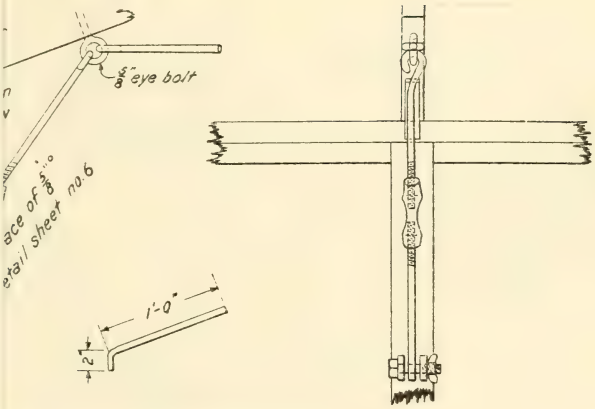
SCALE, 1½" = 1'-0"

CORRECT ..... H. S. Fairbank ..... HIGHWAY ENGINEER

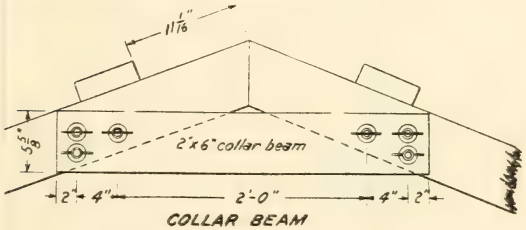
APPROVED ..... J. T. Pierpont ..... CHIEF, ROAD ECONOMICS

E-58

DESIGNED BY H. S. Fairbank DATE 2-15-16
TRACED BY G. C. Spann DATE 2-29-16
CHECKED BY H. S. Fairbank DATE 2-29-16



EE BRACE RAFTER CONNECTION



COLLAR BEAM

U. S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

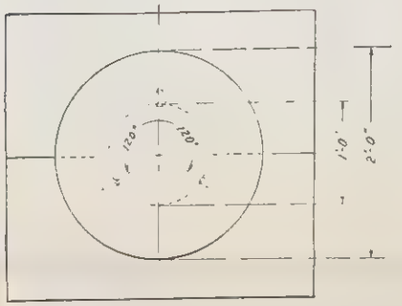
DETAILS
PORTABLE CONVICT CAMP BUILDING

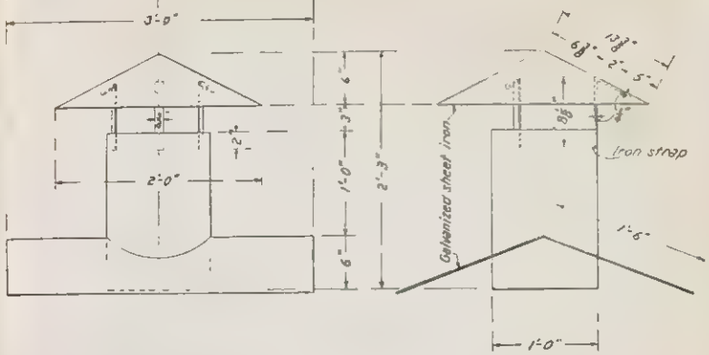
SCALE, 1½" = 1'-0"

RRECT H. S. Fairbank
HIGHWAY ENGINEER

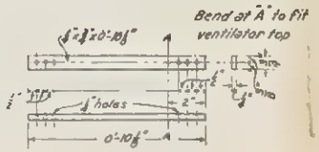
APPROVED J. E. Penny Carter
CHIEF, ROAD ECONOMICS

E-59

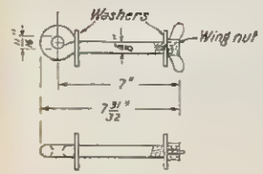




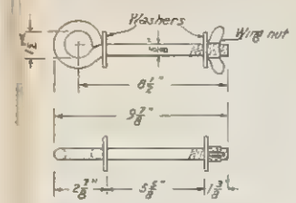
VENTILATOR
1 required for each section
Scale, 1½"=1'-0"



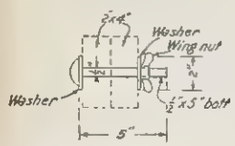
IRON STRAP
3 required for each ventilator
Scale, 3"=1'-0"



EYE BOLT
16 required for single section structure
20 required for each additional section
Scale, 3"=1'-0"



EYE BOLT
8 required for single section structure
10 required for each additional section
Scale, 3"=1'-0"



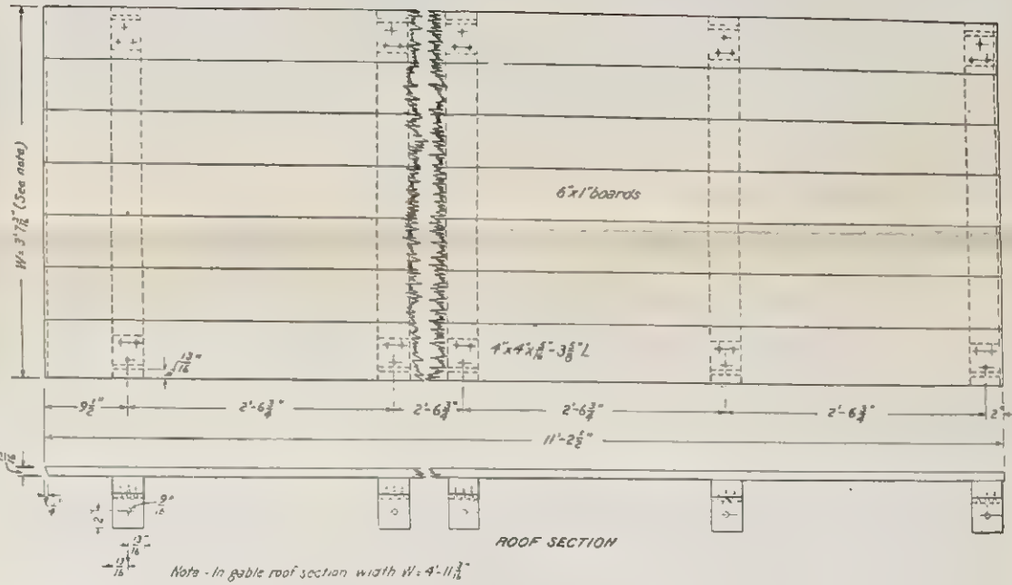
GABLE STUDDING BOLT
4 required for each structure

Note:-For single section structure make { 16 bolts, 7" long, for panels; 24 bolts, 5" long, for collar beam; 92 bolts, 6" long, for panel and plate

For each additional section make { 30 bolts, 5" long, for collar beam; 60 bolts, 6" long, for panel and plate; 10 bolts, 7" long, for panels

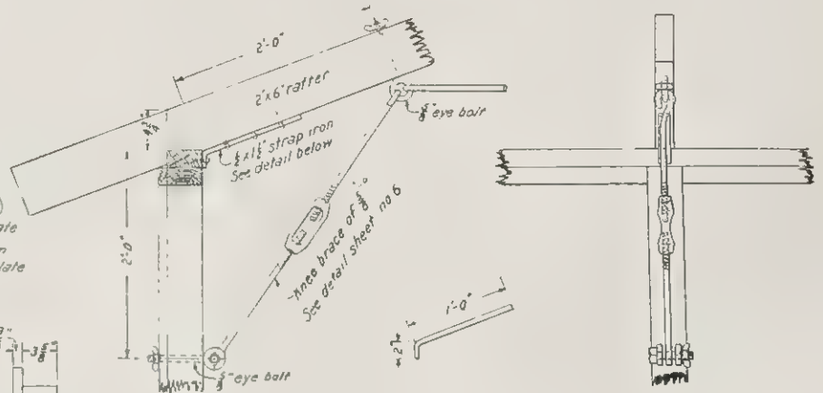
Scale, 3"=1'-0"

For each structure make 12 bolts, 7" long, for corner posts

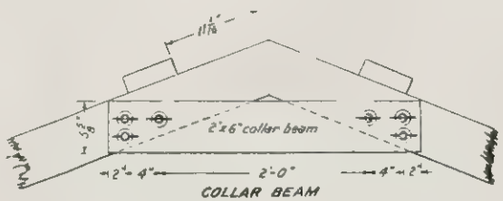


ROOF SECTION

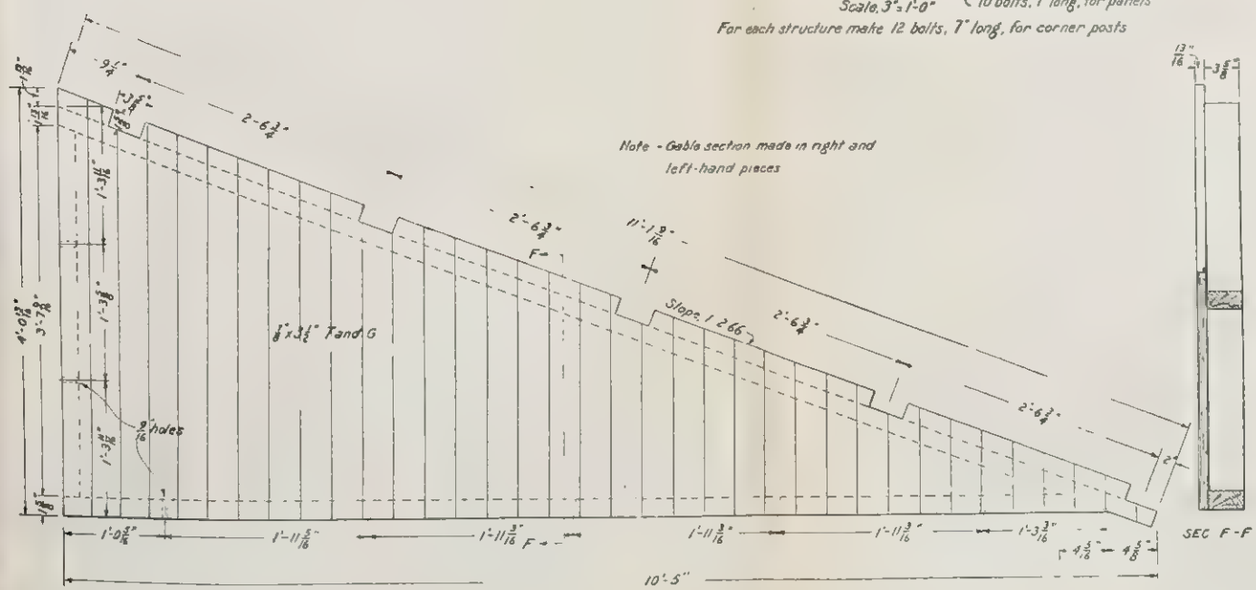
Note - In gable roof section width W = 4'-11⅞"



KNEE BRACE RAFTER CONNECTION



COLLAR BEAM



GABLE SECTION

U. S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

DETAILS
PORTABLE CONVICT CAMP BUILDING

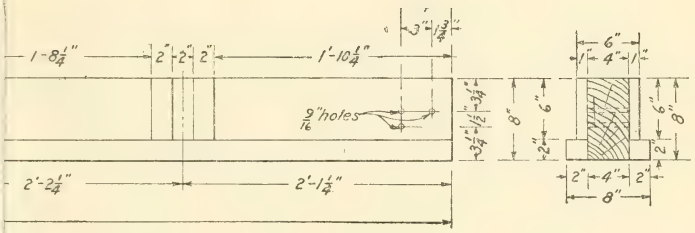
SCALE, 1½"=1'-0"

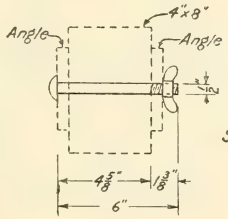
DESIGNED BY A. D. Fairbank DATE 2-15-16
TRACED BY L. E. Brown DATE 3-3-16
CHECKED BY A. D. Fairbank DATE 3-3-16

CORRECT A. D. Fairbank HIGHWAY ENGINEER

APPROVED Thos. H. MacDonald CHIEF, ROAD ECONOMICS

E-59





Scale 3"=1'-0"

rews.
ure make
ieces with all

ed for each

BOLT
(For connection angle)
6 required for single section structure
12 required for each additional section

U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

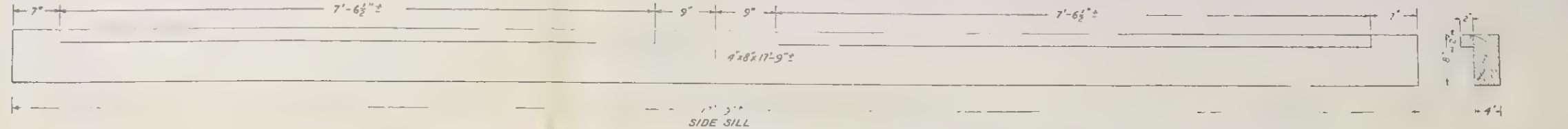
FLOOR DETAILS
PORTABLE CONVICT CAMP BUILDING

SCALE, 1½" = 1'-0"

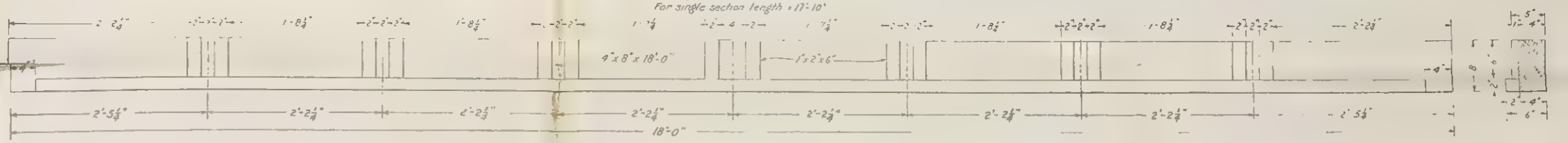
CORRECT H. S. Fairbank
HIGHWAY ENGINEER

APPROVED J. E. Pennybacker
CHIEF, ROAD ECONOMICS

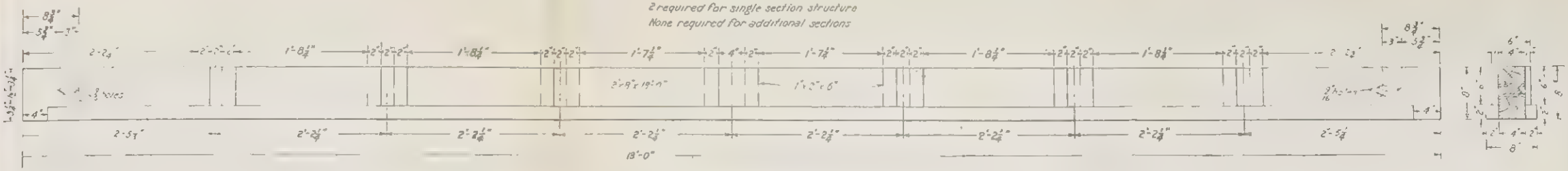
E-60



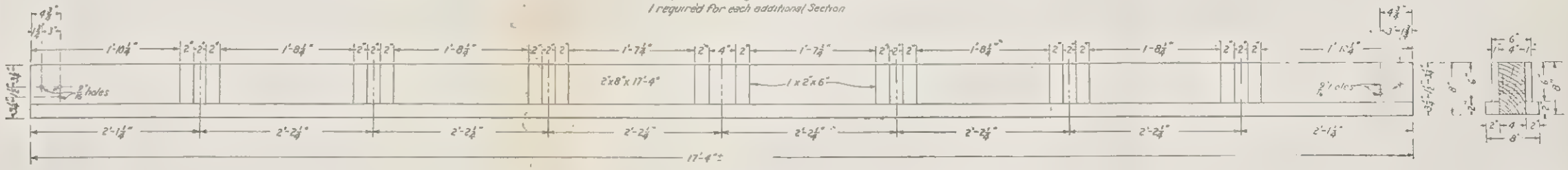
SIDE SILL
2 required for each section
For single section length = 17'-10"



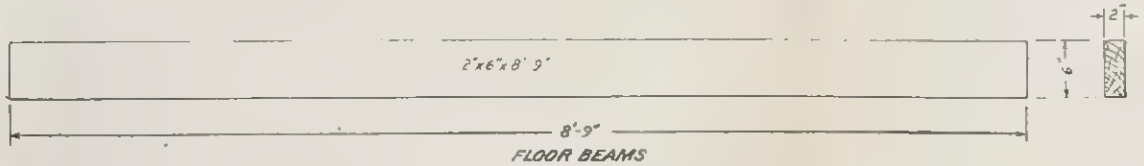
END SILL
2 required for single section structure
None required for additional sections



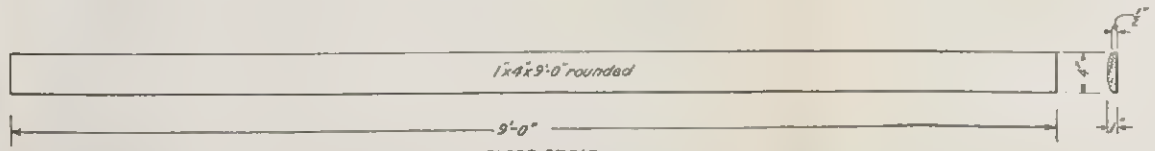
INTERMEDIATE SILL
None required for single section structure
1 required for each additional Section



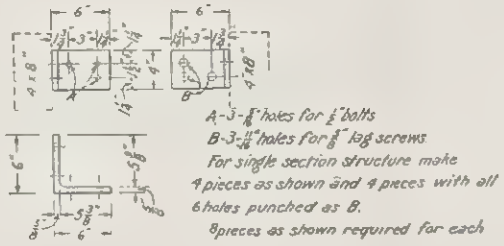
JOIST
1 required for each section



FLOOR BEAMS
16 required for each section
For interior of continued sections, length = 8'-8"

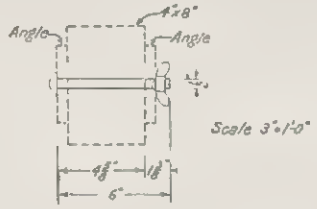


FLOOR STRIP
2 required for each section



A-3-$\frac{13}{16}$" holes for $\frac{5}{8}$" bolts
B-3-$\frac{11}{16}$" holes for $\frac{5}{8}$" lag screws
For single section structure make 4 pieces as shown and 4 pieces with all 6 holes punched as B.
8 pieces as shown required for each additional section.

CONNECTION ANGLE
(6"x6"x4"x$\frac{5}{8}$" steel)



BOLT
(For connection angle)
6 required for single section structure
12 required for each additional section

U S OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

FLOOR DETAILS
PORTABLE CONVICT CAMP BUILDING

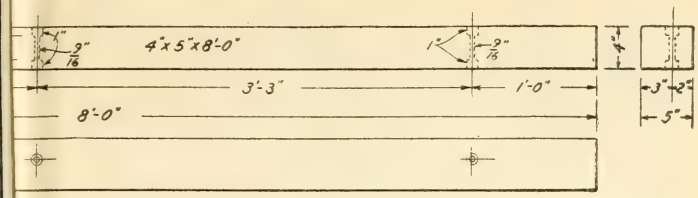
SCALE, 1½" = 1'-0"

CORRECT H. S. Fairbank
HIGHWAY ENGINEER

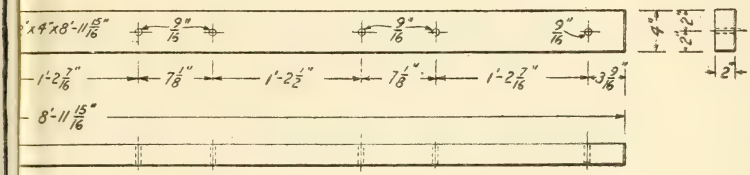
APPROVED J. E. Pennybacker
CHIEF, ROAD ECONOMICS

E-60

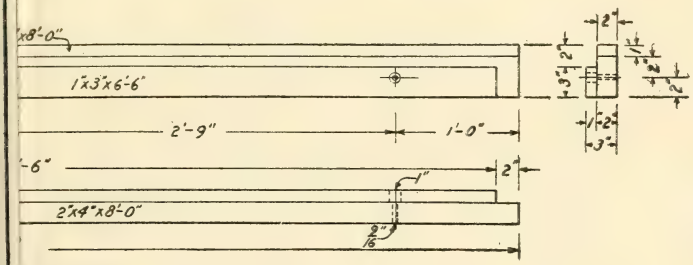
DESIGNED BY H. S. Fairbank DATE 2-15-16
TRACED BY G. C. [illegible] DATE 3-4-16
CHECKED BY H. S. Fairbank DATE 3-4-16



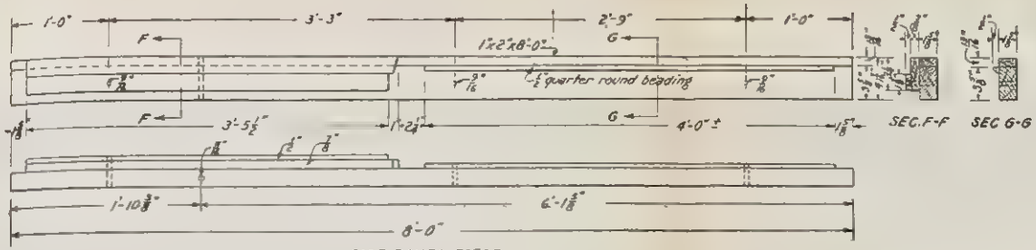
CORNER POST
uired for each structure



ONG PLATE
gle section. structure.
ch additional section.

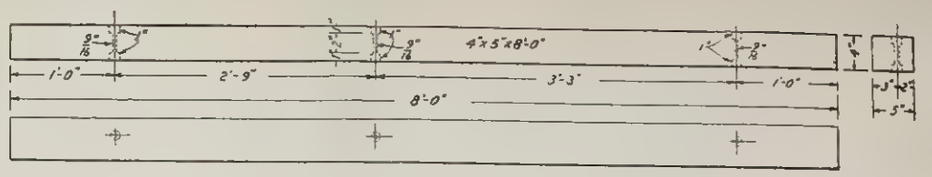


ECE (DOOR)
ch structure.
wn.
r 3" piece on opposite side.



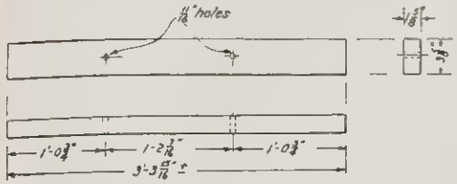
SIDE PANEL PIECE

2 required for each panel
36 required for single section structure
16 with holes as shown
16 without ⅝" hole
4 without any holes
20 required for each additional section



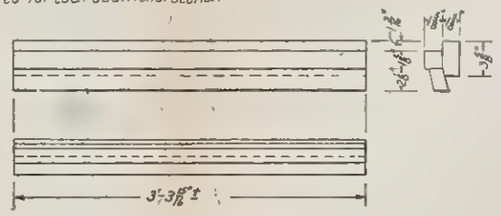
CORNER POST

4 required for each structure



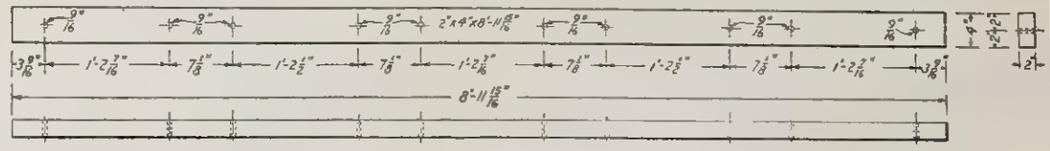
BOTTOM PANEL PIECE

1 required for each panel
For single structure make 18 as shown
For each additional structure make 10 as shown



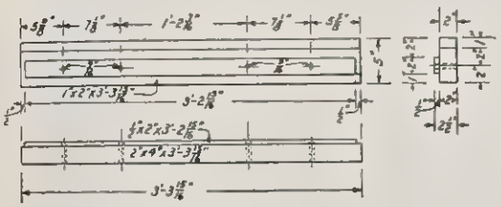
SILL AND CENTER PANEL PIECE

1 required for each panel
For single structure make 18 as shown
For each additional structure make 10 as shown



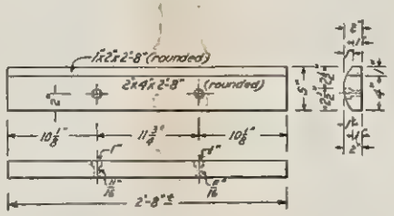
LONG PLATE

2 required for single section structure
4 required for each additional section



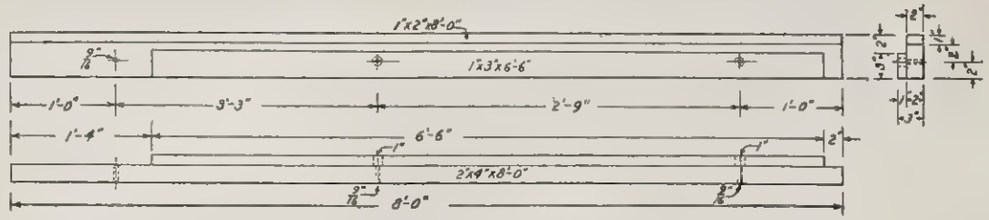
TOP PANEL PIECE

1 required for each panel
18 required for each single section structure
10 required for each additional section



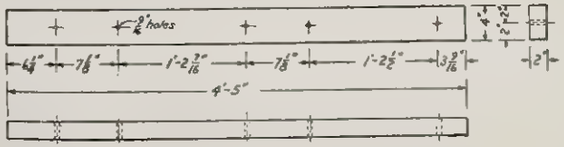
DOOR STRIP

2 required for each structure



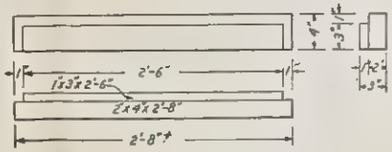
SIDE PIECE (DOOR)

4 required for each structure
Make { 2 as shown.
2 with 1"x3" piece on opposite side.



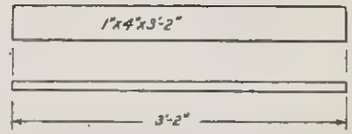
SHORT PLATE

4 required for each structure



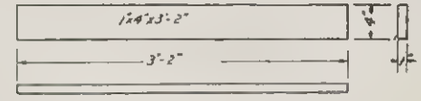
TOP DOOR JAMB

2 required for each structure



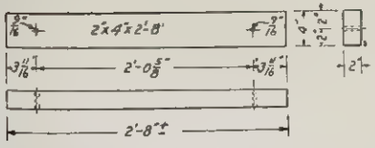
BOTTOM NAILING STRIP
(UPPER WINDOW)

10 required for single section structure
6 required for each additional section



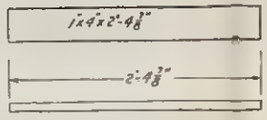
TOP NAILING STRIP
(UPPER WINDOW)

10 required for single section structure
6 required for each additional section.



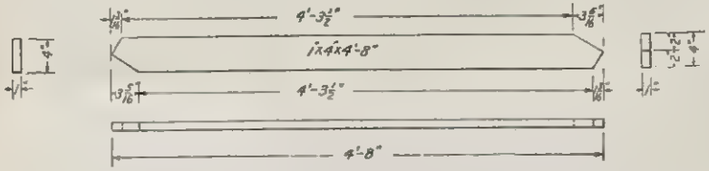
TOP PIECE (DOOR)

2 required for each structure



CROSS NAILING STRIP
(DOOR)

4 required for each structure



DIAGONAL NAILING STRIP
(DOOR)

2 required for each structure

U. S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

SIDE DETAILS
PORTABLE CONVICT CAMP BUILDING

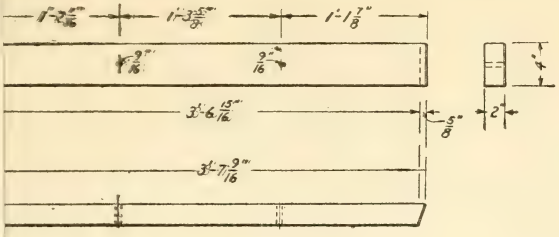
SCALE, 1½" = 1'-0"

CORRECT H. S. Fairbank
HIGHWAY ENGINEER

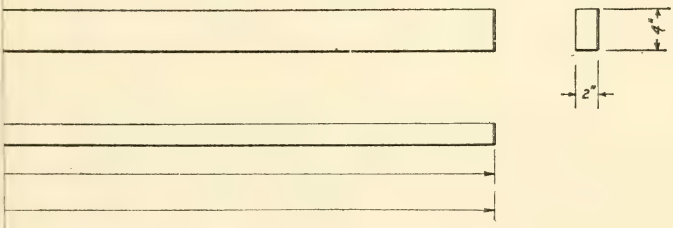
APPROVED J. E. Pennybacker
CHIEF, ROAD ECONOMICS

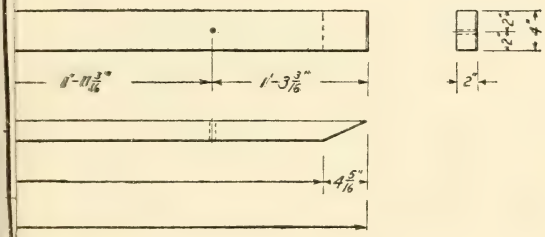
E-61

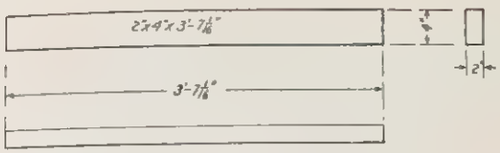
DESIGNED BY H. S. Fairbank DATE 3-9-16.
TRACED BY G. C. Dunn DATE 3-9-16.
CHECKED BY H. S. Fairbank DATE 3-9-16.



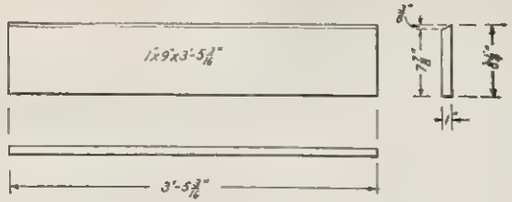
GABLE END STUDDING
4 required for each structure



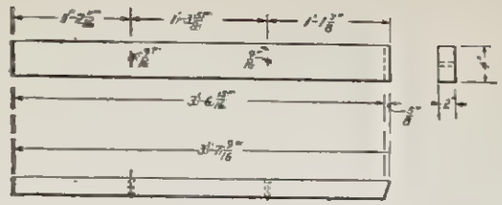




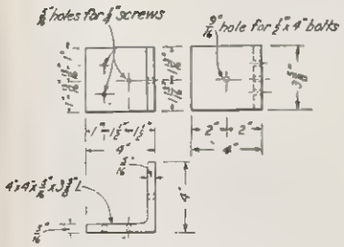
PURLIN
50 required for each section



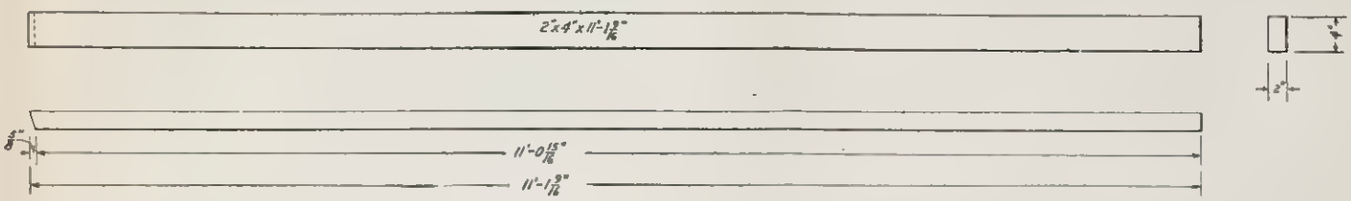
FILLER STRIP (EAVES)
10 required for each section



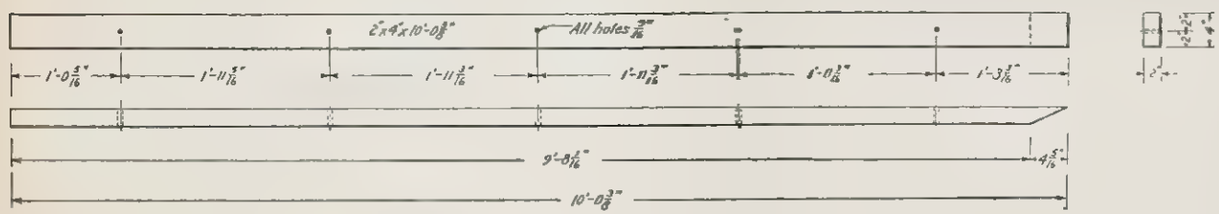
GABLE END STUDDING
4 required for each structure



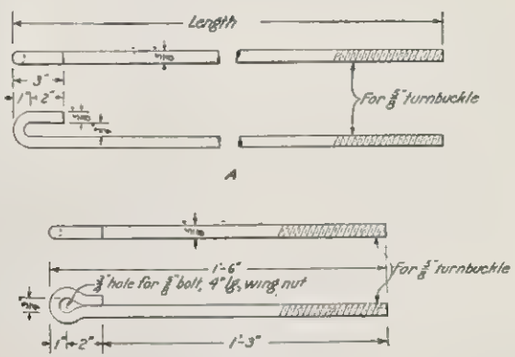
CONNECTING ANGLE (FOR PURLIN)
80 required for single section structure
100 required for each additional section
Scale, 3"=1'-0"



GABLE END RAFTER
4 required for each structure



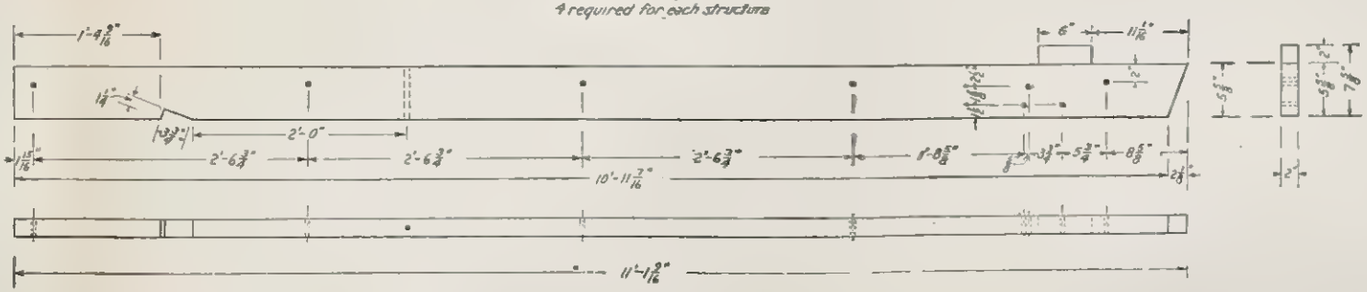
BOTTOM PLATE (GABLE END)
4 required for each structure



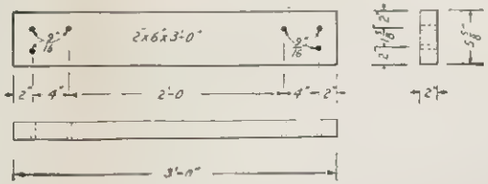
BRACE RODS

For single section structure	8	required as	"A"	6'-7½" long.
	8	" "	"A"	1'-6" "
	8	" "	"B"	1'-6" "
For each additional section	10	" "	"A"	6'-7½" "
	10	" "	"A"	1'-6" "
	10	" "	"B"	1'-6" "

Make half with right hand threads
" " " left " "
Scale, 3"=1'-0"



RAFTER
8 required for single section structure
10 required for each additional section



COLLAR BEAM
4 required for single section structure
5 required for each additional section

U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

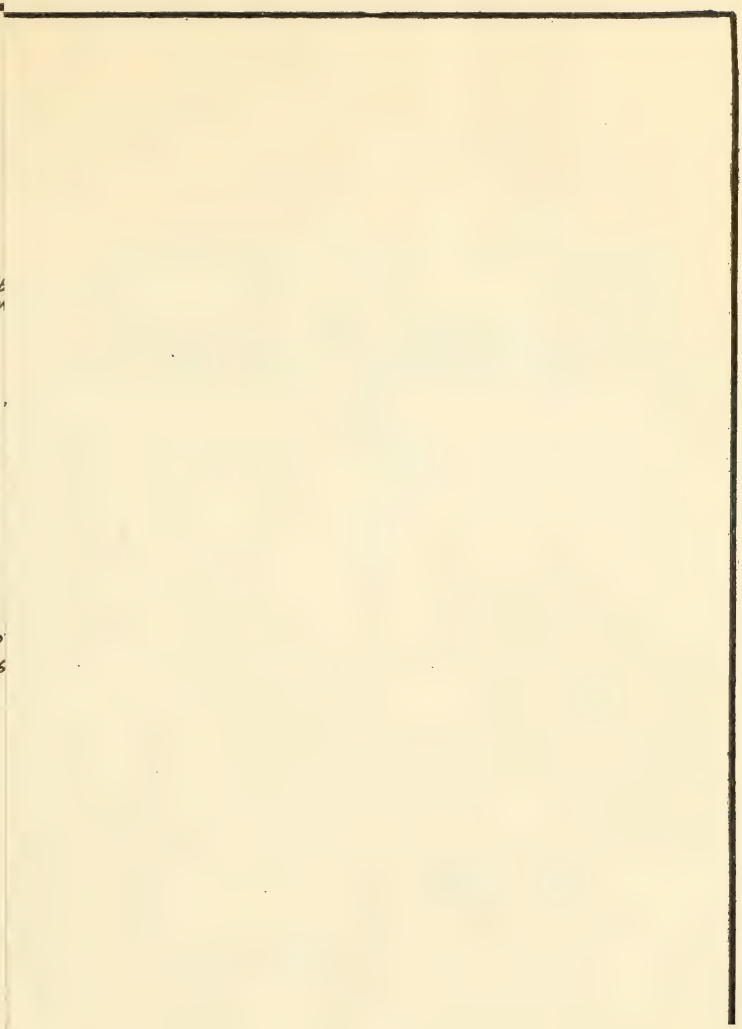
ROOF DETAILS
PORTABLE CONVICT CAMP BUILDING

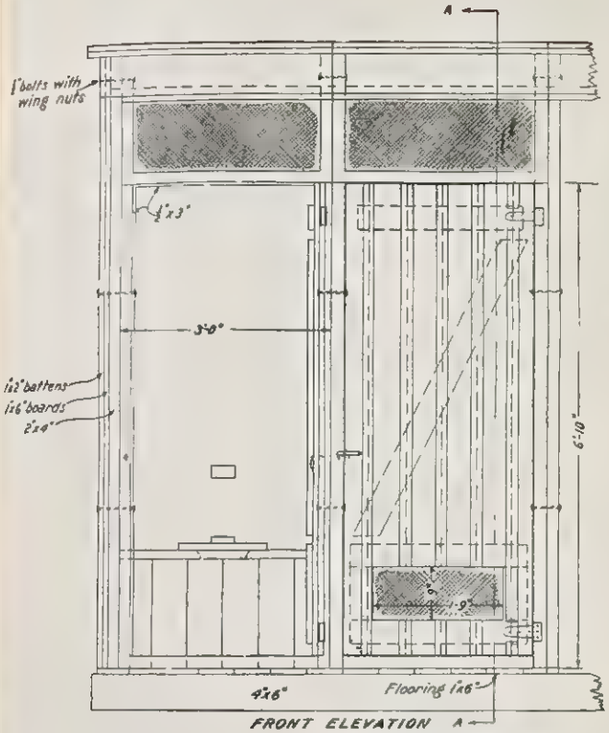
SCALE, 1½"=1'-0"

DESIGNED BY A. S. Fairbanks DATE 2-15-16
TRACED BY S. C. B. DATE 3-10-16
CHECKED BY A. S. Fairbanks DATE 3-10-16

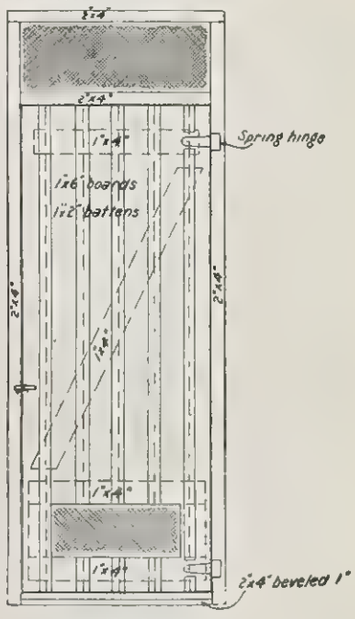
DIRECTOR A. S. Fairbanks HIGHWAY ENGINEER
APPROVED J. E. Laythe CHIEF ROAD ECONOMICS

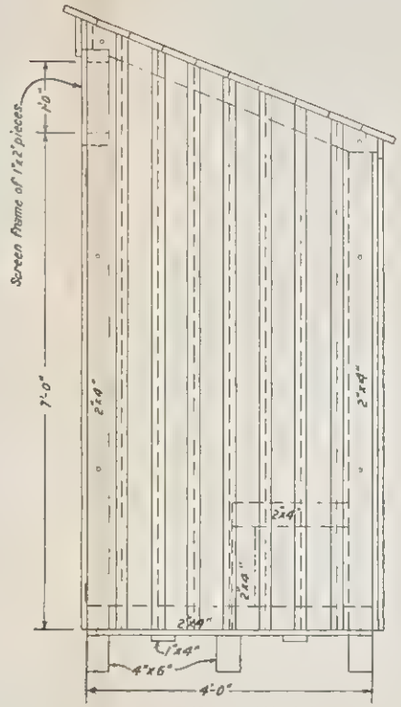
E-62

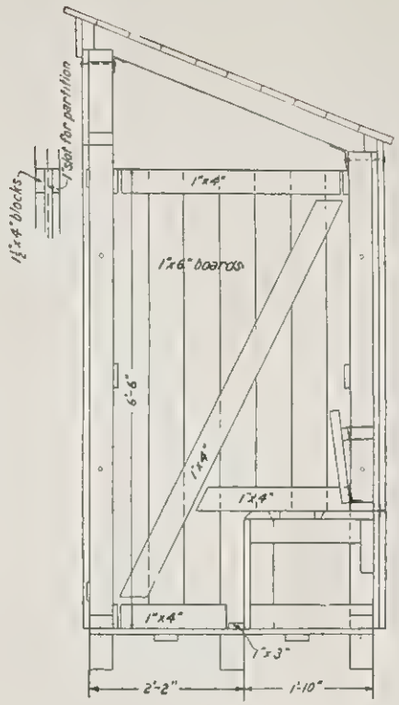




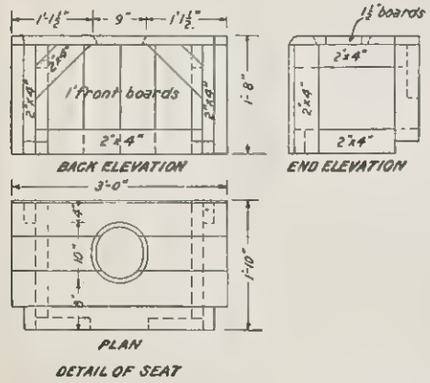
FRONT ELEVATION A

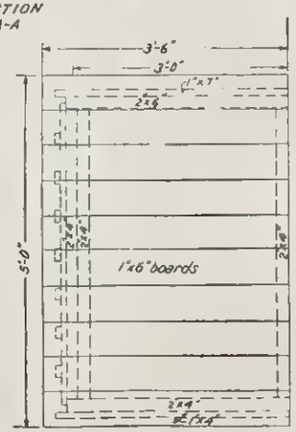


DETAIL OF FRONT SECTION

END ELEVATION



SECTION A-A





PLAN OF ROOF

U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

DETAILS
PORTABLE FLYPROOF PRIVY

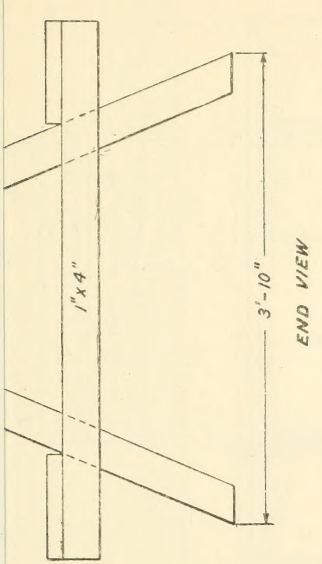
SCALE, 1" = 1'-0"

CORRECT ..... HIGHWAY ENGINEER

APPROVED ..... CHIEF ROAD ECONOMICS

E-56

DESIGNED BY O. L. S. DATE 2-15-16
TRACED BY ... DATE 2-18-16
CHECKED BY O. L. S. DATE 2-18-16



U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

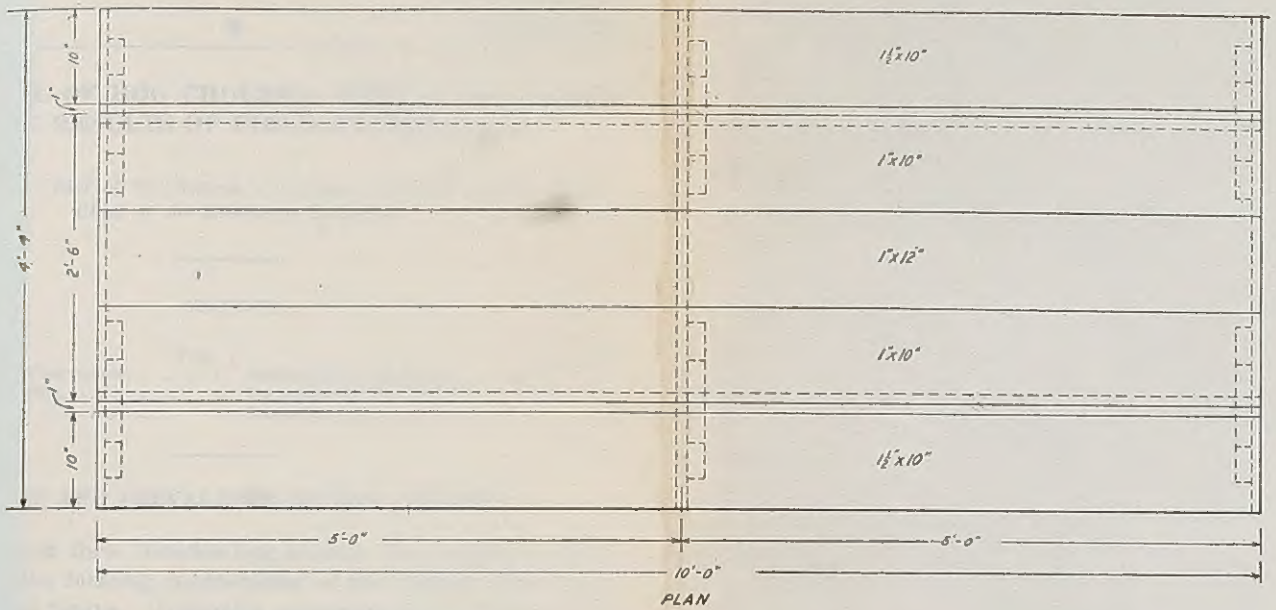
DETAILS OF MESS TABLE
PORTABLE CONVICT CAMP

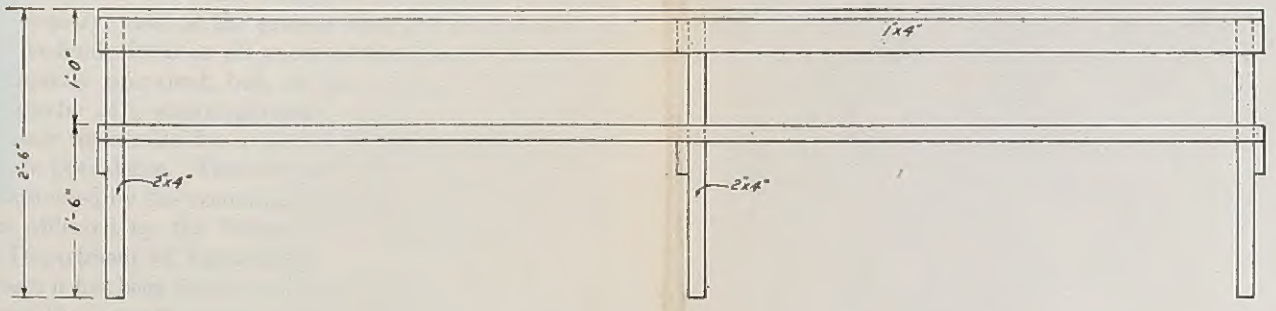
SCALE - $1\frac{1}{2}$" = 1'-0"

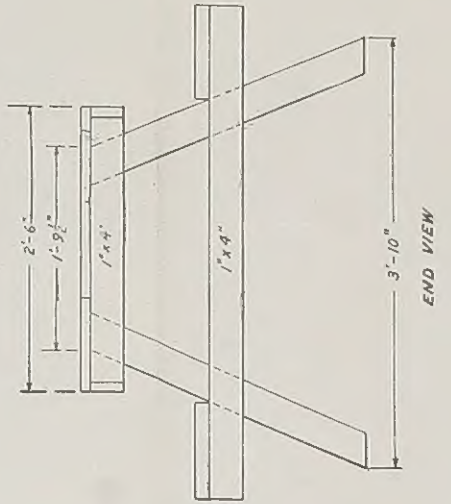
CORRECT ..... H. S. Fairbank ..... HIGHWAY ENGINEER

APPROVED ..... J. T. Pennybacker ..... CHIEF, ROAD ECONOMICS

F-6







U.S. OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
ROAD ECONOMICS

DETAILS OF MESS TABLE

PORTABLE CONVICT CAMP

SCALE- 1½"=1'-0"

DESIGNED BY H. S. Fairbank DATE 2-15-16
TRACED BY G. C. Dunn DATE 3-4-16
CHECKED BY H. S. Fairbank DATE 3-4-16

CORRECT H. S. Fairbank HIGHWAY ENGINEER

APPROVED J. T. Pumphrey CHIEF, ROAD ECONOMICS

F-6